A Soil Cap Design Decision Meeting Minutes

857068

McCormick & Baxter
Soil Cap Design Decision Meeting
Tuesday 9/15/04, 9 AM

Location:	2020 SW 4th Ave 4th Floor Portland, OR 97201
Meeting called by:	DEQ & EPA
Type of Meeting:	Decision Meeting - Soil Cap Design
Facilitator:	Dick Pedersen – NW Region Manager (ODEQ)
Agenda:	See Attachment A
Note Taker:	Brenda Ray Scott, Northwest Staffing

Attendees:	Dick Pedersen	DEQ
	Kevin Parrett	DEQ
	Steve Campbell	DEQ
	Heidi Blischke	DEQ
	Rod Struck	DEQ
	Fenix Grange	DEQ
	Dan Opalski	EPA R10
	Sheila Eckman	EPA R10
	Lori Cohen	EPA R10
	Rene Fuentes	EPA R10
	Jennifer McDonald	EPA R10
	Peter Contreras	EPA R10
	Jean Lee	Environment International
	Tom Downey	Confederated Tribes of Siletz
	Brian Cunninghame	Confederated Tribes of Warm Springs
	Helen Hillman	NOAA
	Gayle Garman	NOAA
	Mike Riley	S.S. Papadopulos & Assoc.
	Mick Easterly	US Army Corps of Engineers
	John Montgomery	Ecology & Environment

Meeting called to order at 9:15 a.m.

I. Background: Pursuant to the 1996 Record of Decision, DEQ and its contractor, Ecology & Environment, Inc. (E&E), prepared several documents which describe the design of the Upland Soil Cap to be constructed at the McCormick & Baxter Superfund Site. One of these documents, the Soil Cap Design Criteria Report (E&E, February 2004), describes the criteria for the basis of the detailed design of the cap. DEQ submitted the Design Criteria Report for review and comment by the project team, Trustees and the Tribes. Based on concerns of several reviewers, the design approach was modified to reduce rainwater infiltration by increasing the degree of evapotranspiration. Subsequently, E&E produced the Upland Cap Pre-Final Design Report (E&E, July 2004) which provided a technical design for an Evapotranspiration (ET) Cap, numerous supporting studies, a conceptual Monitoring and Maintenance Plan and a comparison of costs and schedules for implementing an ET Cap versus a RCRA cap. DEQ submitted the Upland Cap PreFinal Design Report for review and comment by the project team, Trustees and the Tribes. Several commenters expressed concern that an ET Cap would not provide sufficient reduction of rainwater infiltration and could result in continued NAPL flow to the river. As a result of these concerns, DEQ conducted additional studies to better determine the effectiveness of the ET Cap versus a RCRA-type impermeable cap. Results of the additional studies were presented to the project team, Trustees and the Tribes on September 14, 2004, but consensus on the upland cap design could not be reached by all parties at that time.

II. Purpose: The purpose of this meeting was for senior managers to agree upon a final upland capping option for the McCormick and Baxter site. Extended technical discussions at the Project Team level to date had not produced consensus on a capping design. The following 3 options were presented as recommendations to senior management:

1) a permeable Evapotranspiration (ET) cap for the area with the barrier wall,
2) a RCRA cap for the entire area within the barrier wall, or
3) a combination of the above options, in which the impermeable cap would be placed over the area within the barrier wall, and an ET cap would be placed in the 3.1 acre area along the river where a riparian habitat area had been planned.

III. Welcome and Introductions: Dick recognized all partners and expressed appreciation for the significant work completed to date on the McCormick & Baxter site. He described the aggressive schedule that DEQ and EPA agreed to, and expressed full confidence that the project would meet the time and dollar commitments established.

As a representative of the Confederated Tribes of the Warms Springs, Brian Cunninghame acknowledged that DEQ and EPA are learning valuable lessons about collaborative cleanup efforts, during what seems at times a long and convoluted process. He thanked both agencies for becoming increasingly responsive to tribal concerns. He also expressed thanks to Kevin Parrett, Heidi Blischke, Fenix Grange, and the contractors involved with the project for recent improvements in technical communication with the Tribes.

Dan acknowledged that the process has not been perfect and complimented all on adjusting work styles and schedules to accommodate the needs of project. He reminded all that now was not the time to leave anything unspoken.

Helen communicated her concern that NOAA became involved later in the process, but expressed appreciation that NOAA's concerns about the initial barrier wall design were addressed, and resulted in a design change to a fully encompassing wall. She thanked EPA and DEQ staff for their work on moving the project forward.

Dick presented a revised agenda for the meeting, which included a technical presentation, and an open technical discussion, separate partner caucuses, and a senior management discussion meeting (see attached agenda for details).

IV. Presentation on Technical Basis for Soil Cap Design Decision at McCormick & Baxter Superfund Site. Heidi Blischke, DEQ's project hydrogeologist, presented NAPL mobility data and groundwater flow predictions using the MODFLOW groundwater model. The purpose of the NAPL mobility and groundwater modeling assessments was to determine whether an ET Cap or a more traditional RCRA Cap should be selected to cover the area encompassed by the subsurface barrier wall. This modeling had provided the majority of the acknowledged technical framework for Soil Cap Design discussions. An electronic file of Heidi's presentation is posted on E&E's ftp site (bufis1.ene.com/McCormick_Baxter)[1].

Heidi's presentation was a revised and abbreviated version of the more detailed presentation provided to the M&B Project Team on September 14 (the day previous to this meeting) by Heidi, Mike Riley and Mick Easterly. The technical results and conclusions provided in the presentation were discussed in detail by the technical Project Team and other meeting attendees. Consensus on the conclusions and the most appropriate capping design was not reached by the technical Project Team members. Additional groundwater flow model runs and NAPL mobility calculations were conducted after the September 14th meeting to address the questions posed by the technical team prior to the September 15th meeting. The presentation was modified to include these results.

Following are DEQ's substantive conclusions from the NAPL mobility and groundwater modeling assessments:

> ***Overtopping: Will groundwater overtop the wall?***
> With an ET Cap, groundwater will potentially overtop the wall for periods of several months during extreme, 100-year rainfall events, similar to events which occurred in 1996 and 1997. With a RCRA cap over the upland portion of the barrier wall and an ET Cap over the 3.1 acre riparian zone along the riverbank, groundwater would potentially overtop for up to a week or two during similar

[1] password – username: extranet\mandbftp and password: jeln23k

storm events. With a RCRA type Cap over the full barrier wall area, including the riverbank habitat area, groundwater was not predicted to overtop during a 1996 type flooding event. With each alternative, the river itself will overtop the upland cap during a 1996-type flooding event.

LNAPL Mobility: If overtopping occurs will LNAPL migrate over wall?
Light Non-Aqueous Phase Liquid (LNAPL) mobility calculations indicate that LNAPL saturations of 8 to 15% are not high enough to allow LNAPL to migrate over the wall during flooding events. Detailed spreading calculations across the vadose zone, using the measured saturations from cores, and the measured LNAPL thicknesses in wells, show that a well would need to have greater than 10 feet of LNAPL to overtop the barrier wall. LNAPL thicknesses in wells within the barrier wall are typically less than 1 foot, with the greatest historically measured amount being 3.66 feet in EW-15s.

There is also a 5 to 7 foot vadose zone buffer that will trap and smear mobile LNAPL present within this zone prior to overtopping the wall. It is difficult to predict whether a sheen will occur with overtopping events, as sheens migrate differently than the normal, Darcian LNAPL flow. It is predicted, however, that any sheen present during a flooding event would quickly dissipate due to the large flow of a flooding river. Sheens are very common occurrences during flooding events along the industrial portions of the Willamette River.

Helen Hillman made the point that if you had overtopping during a storm event, it would not result in a significant exposure to fish, because fish will not likely to be present at that time anyway.

DNAPL Mobility: Will DNAPL migrate from within wall to River?
Dense Non-aqueous Phase Liquid (DNAPL) mobility calculations indicate that due to low DNAPL saturations and low vertical gradients, DNAPL is not expected to migrate significant distances under any of the capping scenarios. Vertical gradients are minimal and have a net downward gradient present within and just outside of the barrier wall and the Riverward side.

Dissolved Concentration: Will dissolved concentrations of NAPL increase at the river as a result of the barrier wall?
No. Dissolved concentrations entering the river are expected to be in equilibrium with the sediment. There is significant amount of creosote residual saturations outside of the barrier wall. A worse-case scenario is that groundwater would be in equilibrium with this contamination and contaminants will sorb to the cap prior to reaching the River.

The soil cap and barrier will reduce the amount of groundwater passing through the contamination in the FWDA that reaches the river. In addition, the barrier wall has already significantly reduced the amount of groundwater flow through the NAPL saturated area within the barrier wall.

Modeling flow results for each recommendation:
The following presents the results of the hydrodynamic modeling done to predict groundwater flow through the impacted areas to the river. Pre-Barrier Wall total flow through the FWDA to the River was approximately 572 ft^3/d. Post-Barrier Wall modeling showed the following results:

- groundwater flow with a native grass evapotranspiration cap (ET) over the barrier wall area would be reduced to approximately 191 ft3/d. With a conifer forest ET cap, which was the design goal for the ET cap, the flow would be further to approximately 129 ft3/d from the FWDA to the River.
- Placing a RCRA cap over most of the barrier wall area while leaving a riparian strip as an ET cap over those 3.1 acres, reduces the flow from the FWDA to the River further to 89 ft3/d.
- And finally, placing an impervious cap over the entire barrier wall area, as well as the riparian area, reduces the groundwater flow from the FWDA to the River to 22 ft2/d. This 22 ft3/d of groundwater flow is predicted from the MODFLOW groundwater model as being flow from the upland area underneath the wall and potentially contacting contaminated soils within the FWDA area.
- In addition the slope along the riparian area would add additional runoff that does not infiltrate into the barrier wall area under the scenarios with ET cap components.

The main objection to an ET cap (DEQ's recommendation) from some Project Team members was that this capping would allow too much rainwater to percolate into the barrier wall. It was felt this could result in either groundwater overtopping the barrier wall, or the migration of contaminants (as either dissolved constituents or NAPL) to the river from beneath the wall.

V. Group Discussion:

Rene and Jean expressed concern that despite the modeling predictions, NAPL and dissolved contaminant transport might still occur at levels of concern with an ET cap design. More comprehensive sampling and additional monitoring time were mentioned as means of reducing this uncertainty about ET cap effectiveness.

Much of the rest of the group discussion focused on the amount of rainwater and surface water infiltration along the riverbank riparian area, and whether an ET Cap, instead of an Impermeable Cap, in this area would strike a reasonable balance between a conservative, protective remedy while providing important features of riparian habitat.

Kevin reminded the group that the sediment cap, currently under construction, provides for regrading and extensive planting of trees and shrubs along the riverbank. This design was required by NOAA as a conservation measure in the approved Biological Opinion for the Sediment Cap. Any change in this approach could require a reconsultation for a revised Biological Opinion, with associated impacts to the completion schedule (probably at least a loss of one work season). Brian expressed concern that what was being referred to as the Greenway or riparian habitat area was not in intimate contact with the river and, therefore, would provide questionable benefit to aquatic species. Helen summarized the benefits to the aquatic ecosystem that could be realized with a highly vegetated riverbank. Kevin also pointed out that the GW modeling used for the ET Cap area of the riverbank was very conservative- it assumed no surface water runoff even though the riverbank will have a slope of 5 horizontal to 1 vertical. Mike explained the difficulty trying to model surface water runoff with the planned bank profile. Dan acknowledged that in reality surface water runoff would result in much better performance of the ET Cap over the riverbank area than predicted by the GW modeling.

VI. Decision on Soil Cap Design:

After a break for smaller group discussions, Dick reconvened the meeting and announced that DEQ and EPA senior management, based input from those present at the meeting had agreed on an Impermeable Cap over the upland portion of the site within the barrier wall and an ET Cap over the riverbank riparian area (i.e., Partial Impermeable Cap with Riparian Habitat). He noted that one important consideration is choosing the option that combined the RCRA cap within most of the barrier wall with the ET cap over 3.1 acres was that the ground water flow to the river would be adequately reduced. The modeling showed that this option would reduce flow through the site to 89ft ^{3}/day, while the RCRA cap would reduce flow to 22ft ^{3}/day. The technical group had agreed that the 'real' difference between these numbers was not that significant given the uncertainties inherent in the modeling and the fact that the increased slope along the riparian area had not been factored into the model. He commented that a combination upland Impermeable Cap and riverbank ET Cap will maintain important habitat mitigation efforts, as required by the Sediment Cap Biological Opinion, while maintaining adequate protection against NAPL migration. A meeting summary and listing of design criteria will be generated following this meeting. Also, DEQ will prepare a schedule that includes built-in checkpoints and addresses issues as they arise.

Brian acknowledged that certain realities including funding and schedule affected the decision. He described the McCormick & Baxter Superfund Site as having significant precedent for other projects along the river. The Tribes have a strong interest in riparian habitat in an effort to best serve the river and its salmon.

Dan thanked all for the work completed on the project to date and work yet to be completed.

Meeting adjourned at 12:29 p.m.

Attachment A

Agenda
Agency and Tribal Meeting on Soil Cap Design
McCormick and Baxter

Wednesday, September 15, 2004, 9 AM - 1 PM
Room E, DEQ Northwest Region Office, 2020 SW 4th Avenue

I Introductions, Orientation and Meeting Guidelines – 15 minutes (Dan Opalski and Dick Pedersen)

II Status of Communication with the Tribes – 15 minutes (Fenix Grange, Rod Thompson and Brian Cunningham)

III Status of Remedial Design and Remedial Action – 20 minutes (Kevin Parrett)

IV NAPL Investigation Results and Updated Conceptual Site Model – 30 minutes (Heidi Blischke)

V. GW Modeling Results – 30 minutes (Mike Riley/Heidi)

BREAK – 20 minutes

VI Soil Cap Design – 60 minutes
  a. Design Options for ET vs Impervious Cover (Kevin)
  b. Perspectives on Cap Performance Goals and Risk Management (Group Discussion)
  c. Trying to Reach Consensus (Dan, Dick, Rod and Brian)

VII. Path Forward – (Dick and Dan) - 50 minutes

B Submittal Log and Select Material Submittals

Submittal Log

WILDER
WILDER CONSTRUCTION COMPANY

Project Name: McCormick and Baxter Upland Cap
Job No.: M3005

Submittal No.	Bid Item(s)	Spec. Ref.	Submittal Description	Subcontractor/ Supplier	Manufacturer's Brand	Date Sent	Request Return	Actual Return
001	3.d, 3.g		Sample of Sand and Topsoil	RISG		05/30/05	06/14/05	
002	1.b		Preliminary Project Schedule	WCC		05/27/05	06/11/05	06/02/05
003	1.b	01330	Site Safety Plan	WCC		05/27/05	06/11/05	06/03/05
003.1	1.b	01330	Site Safety Plan Rev. 1	WCC		06/03/05	06/17/05	06/06/05
004	5.d	02620-2	Mfg info for sealing material, screen and casing, cement, sand, chips	CASCADE		05/30/05	06/14/05	06/03/05
005	3.j, 3.k	02630-2,3	MFG info for meter box basin, HDPE pipe, sch 80 pipe/fittings	HD FOWLER		05/30/05	06/14/05	06/03/05
005.1	3.j, 3.k	02630-2,3	MFG info for meter box basin	HD FOWLER		06/08/05	06/23/05	06/10/05
005.2	3.j, 3.k	02630-2,3	MFG installation info for Smooth Wall HDPE pipe	WL PLASTICS		06/15/05	06/30/05	06/17/05
006	5.b, 4.c, 4.a, 3.b		Mfg info for barrier fence, EC netting, geomembrane liner, geocomposite, geotextile	NW LININGS		05/30/05	06/14/05	06/06/05
006.1	5.b, 4.c, 4.a, 3.b		Mfg info for EC netting, certs for geomembrane liner	NW LININGS		06/20/05	07/05/05	06/23/05
006.3			Mfg. product samples for geomembrane, geocomposite, geotextile	NW LININGS		12/05/05		12/07/05
007		02830	Mfg info for manhole frames, structures	HANSON		05/30/05	06/14/05	06/07/05
007.1		02830	Mfg info for manhole ladders	HD FOWLER		06/08/05	06/23/05	06/10/05
007.2		02830	Shop Drawings for manhole ladders	HD FOWLER		08/11/05	08/26/05	08/16/05
008	3.j, 3.k	02630	Mfg info for HDPE Pipe	HANCOR		05/30/05	06/14/05	06/06/05
009	1.b	01320	Construction Operations Plan	WCC		06/02/05	06/17/05	06/06/05
009.1	1.b	01320	Construction Operations Plan Rev. 1	WCC		06/15/05	06/30/05	06/17/05
009.2	1.b	01320	Construction Operations Plan Rev. 2	WCC		06/22/05	07/07/05	07/01/05
009.3	1.b	01320	Revised Site Layout Plan	WCC		07/12/05	07/27/05	07/22/05
009.4	1.b	01320	NPDES Permit, Erosion and Sediment Control Plan	WCC		07/28/05	08/12/05	08/15/05
010	5.a	02200	Sieve Analysis for Base Rock	MBI		06/08/05	06/23/05	06/10/05
010.1	5.a	02200	New Sieve Analysis for Base Rock	MBI		06/20/05	07/05/05	06/23/05
011	3.d	02200	Test Results from RISG sand	RISG		06/08/05	06/23/05	06/13/05
012	1.b	02630	Certifications for fusion welder/training	HD FOWLER		06/15/05	06/30/05	06/17/05
013	3.j	02630	Fusion joint measurements	WCC		06/09/05	06/24/05	06/17/05
013.1	3.j	02630	Fusion joint measurements	WCC		06/13/05	06/28/05	06/17/05
014	3.j, 3.k	02630	Pipe Certs for Hancor and HDPE Smooth Wall, Installation Guide	HD FOWLER		06/13/05	06/28/05	06/17/05
014.1		02630	Materials list per PO#8422 for cross-check reference with pipe certifications	HD FOWLER		01/20/06	02/04/06	01/20/06
015	3.j, 3.k	02630	Wedding Ring for Conveyance Pipe	HD FOWLER		06/13/05	06/28/05	06/17/05
016	3.j, 3.k	02830	Shop Drawings of outfall structure	HANSON		06/13/05	06/28/05	06/13/05
017	1.5, 1.6	02240, 02245	NW Linings: Geomembrane submittals, Geotextile submittals	NW LININGS		06/14/05	06/29/05	06/20/05
017.1	1.5, 1.6	02240, 02245	NW Linings: Use of ATV for geomembrane deployment	NW LININGS		06/27/05	07/12/05	07/01/05
017.2	1.5, 1.6	02240, 02245	NW Linings: Poly-Flex QA/QC, TRI testing lab, panel layout, Certs from Poly-Flex	NW LININGS		06/27/05	07/12/05	07/05/05
017.3	1.5, 1.6	02240, 02245	Revised Panel Layout for Geomembrane and Geocomposite	NW LININGS		07/12/05	07/27/05	07/15/05
017.4	1.5, 1.6	02240, 02245	NWL Warranties	NW LININGS		12/19/05	01/03/06	12/20/05
017.5		002245	NWL Geocomposite Warranty	NW Linings		01/12/06	01/27/06	01/19/06
018	3.j	02830	Concrete Mix Design for Outfall Structure	GLACIER		06/14/05	06/29/05	06/16/05
018.5		03300	Concrete Compresive Strength Test for Outfall Structure	NW Testing		01/12/06	01/27/06	01/19/06
019	1.b	01450	Quality Control Plan	WCC		06/22/05	07/07/05	07/05/05
020	5.b	02845	Fence/Gate drawings	WILLAMETTE		06/27/05	07/12/05	07/08/05
021	1.d, 3.g, 4.b	02200	Topsoil, info regarding fertil fibers and kiwi powers	RISG		06/28/05	07/13/05	08/16/05
022	1.b	02630	Conveyance Piping Pressure Results	WCC		06/29/05	07/14/05	07/05/05
023	3.b	02240	Conformance Test results for geomembrane liner	NW LININGS		06/30/05	07/15/05	07/01/05
024	1.b	02660	Gas vent plan	WCC		06/30/05	07/15/05	07/08/05
025	5.b, 4.c, 4.a, 3.b	02245	Revised cut sheet for geocomposite with explanation letters, pre-certifications and conformance test results	NW LININGS		07/13/05	07/28/05	07/15/05
025.1	5.b, 4.c, 4.a, 3.b	02245	Pre-Certifications for Geotextile	NW LININGS		07/25/05	08/09/05	08/01/05
026	1.b	02247	Info on geotextile	WCC		07/18/05	08/02/05	07/19/05
026.1	1.b	02247	Geotextile: Conformance Test Results for 2004622560, 2004622563	WCC		07/25/05	08/09/05	08/09/05

WILDER CONSTRUCTION COMPANY

Submittal Log

Project Name: McCormick and Baxter Upland Cap
Job No.: M3005

Submittal No.	Bid Item(s)	Spec. Ref.	Submittal Description	Subcontractor/ Supplier	Manufacturer's Brand	Date Sent	Request Return	Actual Return
026.2	1.b	02247	Geotextile Plan	WCC		07/28/05	08/12/05	08/09/05
026.3	1.b	02247	Geotextile: Certification Letter; Certifications	WCC		08/03/05	08/18/05	08/09/05
027	1.b	02240	Lab Destruct Results # 5, 10	NW LININGS		07/18/05	08/02/05	07/22/05
027.1	1.b	02240	Lab destruct results #5, 15, 14, 18, 20, 25; Memo on 15, 18, 20	NW LININGS		07/18/05	08/02/05	07/22/05
027.2	1.b	02240	NWL Daily Reports, Panel Placement Forms, Panel Seaming Forms, Non Dest Logs, Destruct Results	NW LININGS		07/25/05	08/09/05	08/01/05
027.3	1.b	02240	Lab Destruct Results DS-45, DS-50	NW LININGS		07/27/05	08/11/05	08/01/05
027.4	1.b	02240	Lab Destruct Results DS-55	NW LININGS		07/28/05	08/12/05	08/01/05
027.5	1.b	02240	Cert of Acceptance, Daily Progress Repts, panel placement forms, weld forms, seaming forms, non destructive forms, repair reports, destructive test logs, daily panel layout	NW LININGS		08/01/05	08/16/05	08/05/05
027.6	1.b	02240	Additional documentation to complete Submittal 27.5 (missing dates provided)	NW LININGS		12/05/05	12/20/05	12/07/05
027.7	1.b	02240	As-built Geomembrane Liner lay-out	NW LININGS		12/30/05	01/14/06	01/19/06
028	1.b	02410	Pavement Engineering Report	WCC		07/25/05	08/09/05	08/09/05
029	1.b		Environmental Checklist	WCC		07/27/05	08/11/05	08/09/05
030	1.b		Barge Draft Charts	WCC		08/18/05		08/18/05
031			Certified Payrolls for Subs	SUBS		11/11/05		11/15/05
031.1			Certified Payrolls	WCC		01/17/06		01/23/06
032		02200	Placement Verification Form - topsoil, gravel access roads	NW Geotech		11/11/05		11/15/05
032.1		02200	Placement Verification Form - topsoil	NW Geotech		01/20/06		01/25/06
033		02620	Monitoring Well Reports	Cascade Driiling		11/18/05		12/02/05
034	1.c	02140	Record Drawings	DEA		12/21/05		01/06/06

McCormick & Baxter Landfill

SMOOTH HDPE GEOMEMBRANE

PF250308

POLY-FLEX
POLYETHYLENE GEOMEMBRANES

Property	Test Method	Minimum Average Values 40 Mil
Thickness, mils	ASTM D 5199	
minimum average		40
lowest individual reading		36
Sheet Density, g/cc	ASTM D 1505/D 792	0.940
Tensile Properties[1]	ASTM D 6693 (Type IV Specimen @ 2 in/min)	
1. Yield Strength, lb/in		84
2. Break Strength, lb/in		152
3. Yield Elongation, %		12
4. Break Elongation, %		700
Tear Resistance, lb	ASTM D 1004	28
Puncture Resistance, lb	ASTM D 4833	72
Stess Crack Resistance[2], hrs	ASTM D 5397 (App.)	300
Carbon Black Content[3], %	ASTM D 1603	2.0 - 3.0
Carbon Black Dispersion[4]	ASTM D 5596	-Note 4-
Dimensional Stability, %	ASTM D 1204	±2
Oxidative Induction Time (OIT)		
Standard OIT, minutes	ASTM D 3895	100
Oven Aging at 85°C	ASTM D 5721	
Standard OIT - % retained after 90 days	ASTM D 3895	55
UV Resistance[5]	GRI GM11	
High Pressure OIT[6] - % retained after 1600 hrs	ASTM D 5885	50
Seam Properties	ASTM D 4437	
1. Shear Strength, lb/in		80
2. Peel Strength, lb/in - Hot Wedge		60
-Extrusion Fillet		52
Roll Dimensions		
1. Width (feet):		23
2. Length (feet):		750
3. Area (square feet):		17,250
4. Gross weight (pounds, approx.):		3,403

(1) Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction. Yield elongation is calculated using a gauge length of 1.3 inches; Break elongation is calculated using a gauge length of 2.0 inches.
(2) The yield stress used to calculate the applied load for the SP-NCTL test should be the mean value via MQC testing.
(3) Other methods such as ASTM D 4218 or microwave methods are acceptable if an appropriate correlation can be established.
(4) Carbon black dispersion for 10 different views: All 10 in Categories 1 and 2.
(5) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.
(6) UV resistance is based on percent retained value regardless of the original HP-OIT value.

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McCormick & Baxter Landfill

POLY-FLEX

DOUBLE-SIDED 8OZ GEOCOMPOSITE with 200mil Geonet

PF250308

GEOCOMPOSITE PROPERTIES

Property	Test Method	Minimum Average Values GC-08D-2.0
Transmissivity, (MD), m^2/sec	ASTM D 4716	4×10^{-5}
metal plate/geocomposite/metal plate hydraulic gradient, i = 1 normal pressure = 10,000 lb/ft^2		
Peel Adhesion, lb/inch	ASTM D 7005	1
Roll Dimensions		
1. Roll Width, ft		13.5
2. Roll Length, ft		200

COMPONENT PROPERTIES

Geonet		
Thickness, mil	ASTM D 5199	200
Density, min., g/cc	ASTM D 1505	0.940
Mass/Unit Area, psf	ASTM D 5261	0.162
Carbon Black Content, min, %	ASTM D 1603	2
Tensile Strength, lb/in (Peak, MD)	ASTM D 5035	45
Transmissivity, (MD), m^2/sec	ASTM D4716	1×10^{-3}
metal plate/net/metal plate hydralic gradient, i=1 normal pressure = 10,000 lb/ft^2		
Geotextile (SI)		
Unit Weight, oz/yd^2	ASTM D 5261	8
Grab Tensile, lb	ASTM D 4632	203
Puncture, lb	ASTM D 4833	130
AOS	ASTM D 4751	80 sieve
Flow Rate, gal/min ft^2	ASTM D 4491	110
Mullen Burst, psi	ASTM D 3786	420

The above property values, unless otherwise specified, are the minimum acceptable average test results for any roll based on the specified test methods and do not refer to an individual test specimen. Geotextile property values are Minimum Average Roll Values, except for AOS, which is Maximum Average Roll Value. Geonet and Geotextile properties are tested prior to lamination.
Seat time for Transmissivity test is 15 minutes.
This data is provided for informational purposes only and is not intended as a warranty or guarantee. Poly-Flex, Inc. assumes no responsibility in connection with the use of this data. These values are subject to change without notice. REV. 07/05

POLY-FLEX, INC.
2000 West Marshall Drive • Grand Prairie, Texas 75051, U.S.A.
888-765-9359 • 972-337-7113 • Fax 972-337-7233 • www.poly-flex.com

POLY-FLEX, INC. 2000 W. Marshall Drive Grand Prairie, Texas 75051 USA
888-765-9359 972-337-7113 FAX 972-337-7233

July 8, 2005

Kitt Hawkins
Northwest Linings & Geotextile Products, Inc.
21000 77th Ave. South
Kent, WA 98032

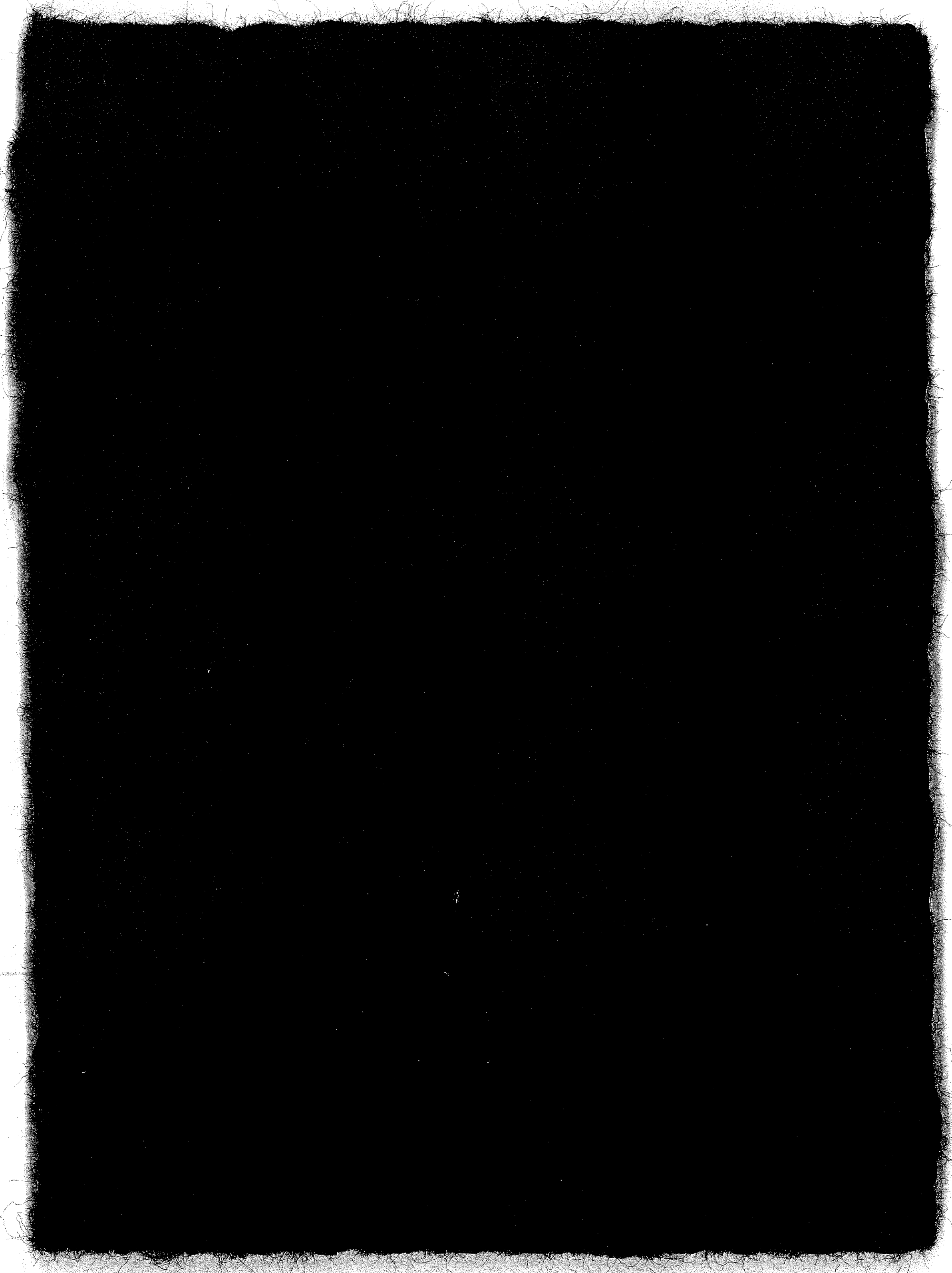
Subject: **Poly-Flex Geocomposite Specification**
McCormick & Baxter Upland Cap - PF#250308

Dear Mr. Hawkins,

The Poly-Flex geocomposite cut sheet submitted for the above referenced project listed the normal pressure for the transmissivity test as 15,000 psf instead of 10,000 psf, which is the standard MQC test pressure for geonets and geocomposites per Poly-Flex and the draft GRI GN2 Standard. We have changed the pressure and are resubmitting the cut sheet with the pressure shown as 10,000 psf. We apologize for any inconveniences that may cause. Please do not hesitate to call me if you should have any questions.

Regards,

Erik Simpson



SI® Geosolutions

Product Data Sheet

GEOTEX® 801

GEOTEX 801 is a polypropylene, staple fiber, needlepunched nonwoven geotextile manufactured at one of SI Geosolutions' facilities that has achieved ISO-9002 certification for its systematic approach to quality. The fibers are needled to form a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils. **GEOTEX 801** conforms to the property values listed below[1] which have been derived from quality control testing performed by one of SI Geosolutions' GAI-LAP accredited laboratories:

PROPERTY	TEST METHOD	MARV[2] ENGLISH	MARV[2] METRIC
Physical			
Mass/Unit Area	ASTM D5261	6.5 oz/yd^2	220 g/m^2
Thickness	ASTM D5199	70 mils	1.8 mm
Mechanical			
Grab Tensile Strength	ASTM D4632	205 lbs	912 N
Grab Elongation	ASTM D4632	50%	50%
Puncture Strength	ASTM D4833	110 lbs	490 N
Mullen Burst	ASTM D3786	350 psi	2413 kPa
Trapezoidal Tear	ASTM D4533	85 lbs	378 N
Wide Width Tensile	ASTM D4595	900 lbs/ft	13.1 kN/m
Endurance			
UV Resistance @ 500 hrs	ASTM D4355	70%	70%
Hydraulic			
Apparent Opening Size (AOS)[3]	ASTM D4751	80 US Std. Sieve	0.180 mm
Permittivity	ASTM D4491	1.50 sec^{-1}	1.50 sec^{-1}
Permeability	ASTM D4491	0.38 cm/sec	0.38 cm/sec
Water Flow Rate	ASTM D4491	110 gpm/ft^2	4480 l/min/m^2
Typical Roll Sizes		150 in x 100 yds 180 in x 100 yds	3.81 m x 91.5 m 4.57 m x 91.5 m

NOTES:

[1] **The property values listed below are effective 12/2003 are subject to change without notice.**

[2] Values shown are in weaker principal direction. Minimum average roll values are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.

[3] Maximum average roll value. Statistically, it yields a 97.7% degree of confidence that samples taken from quality assurance testing will be below the value reported.

SYNTHETIC INDUSTRIES

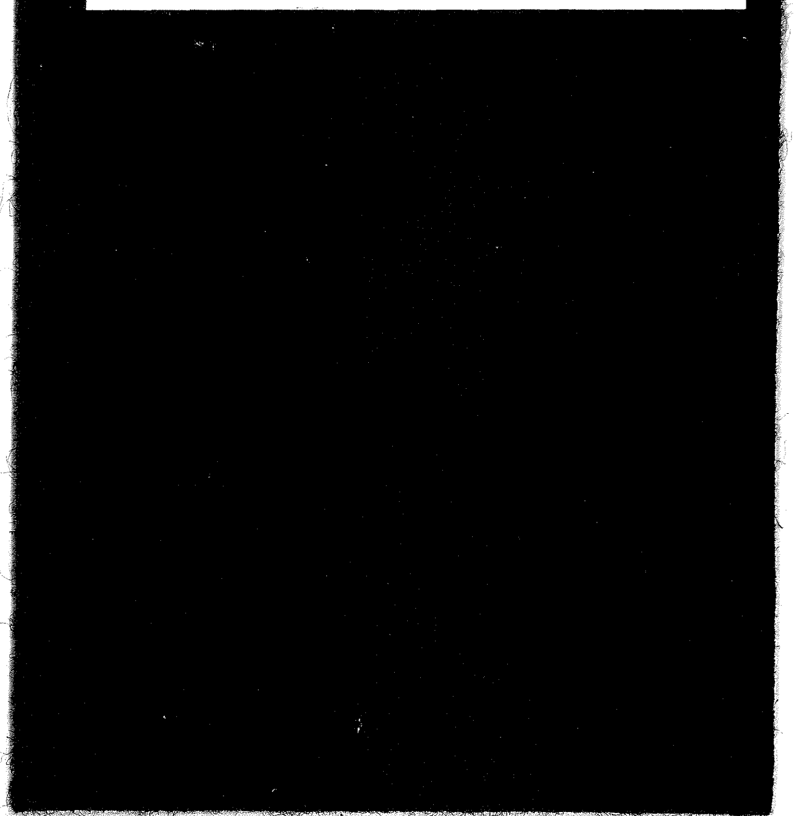
Geosynthetic Products Division

Smart Solutions in Synthetics™

Product Nonwoven Geotextile

Style GEOTEX® 801

4019 Industry Drive • Chattanooga, TN 37416 • USA
800-FIX-SOIL • (423)899-0444 • Fax (423)899-7619



NORTHWEST LININGS & GEOTEXTILE PRODUCTS, INC
TWO YEAR LIMITED WARRANTY
FOR GEOSYNTHETIC PRODUCTS INSTALLATION

Warrant To: State of Oregon Dept. of Administrative Services | **Project: McCormick & Baxter Upland Cap**

Purchaser: Wilder Construction | **Effective Date: 7/30/2005**

Type of Material: 40 Mil HDPE | **S.F. of Material: 700,000**

NORTHWEST LININGS & GEOTEXTILE PRODUCTS, INC., (NWL & G) hereby warrants to: **STATE OF OREGON DEPT. OF ADMINISTRATIVE SERVICES** (WARRANT TO) subject to the terms and conditions contained herein, and not withstanding anything to the contrary in any application or related contracts, as follows:

The fabrication of all field seams and penetrations made by NWL & G shall be free of defects and shall withstand the effects of normal weather conditions and normal wear and tear, for a period of 2(two) years from the above effective date. Whether which shall not be considered normal, for purposes of this Limited Warranty, shall be that which is customarily considered to be in the nature of an act of God, casualty or catastrophe, including but not limited to, earthquake, flood, piercing hail, tornado or fire.

This warranty covers only those defects in workmanship. This Warranty does not cover any damage or defects to the liner found to have been a result of misuse, abuse or conditions existing after the geosynthetic installation was completed including, but not limited to, rough handling; malicious mischief; vandalism; sabotage; fire; acts of God; acts of the public enemy; acts of war or public rebellion; severe weather conditions of all types; or damage due to any of the following; ice; wind; subsidence; chemicals harmful to the Geosynthetic Material; machinery; excessive stress from any source; improper handling during transportation, unloading, storage , floating debris; foreign objects or animals. Failure to properly prepare the soil base underlying the delivered materials free from any protrusions capable of piercing the delivered materials, or relative to installed materials, in a pre-consolidated basis with due consideration for the water table and water content of said soil base. Deviation from any aforesaid conditions shall void this Limited Warranty.

In the event circumstances are found to exist which WARRANT TO believes may give rise to a claim under the Warranty, the following procedure shall be followed:

a) WARRANT TO shall give NWL & G written notice of the facts and circumstances of said claim within 10 days of becoming aware of said facts and circumstances. Said notice shall be by registered or certified mail, return receipt requested, postage prepaid, addressed to Rod Newton, NWL & G, 21000 77th Ave. S, Kent, Washington, 98032. The words "WARRANTY CLAIM" shall be clearly marked on the face of the envelope in the lower right hand corner. Said notice shall contain, at a minimum, the name and address of the owner, the name and address of the installation, the date upon which the installation was completed and the facts known WARRANT TO upon which the claim is based. Failure to provide NWL & G with timely notice of the claim shall void the Warranty.

b) Within twenty days after receipt of the notice described in paragraph a, above, NWL & G shall notify WARRANT TO either that it will send a representative to inspect the allegedly defective area, or that is does not wish to do so. WARRANT TO shall pay the expenses incurred by NWL & G in making the inspection, including current per diem rates for personnel involved in making the inspection, in the event NWL & G determines that the claim is not covered by this Warranty.

c) WARRANT TO Shall not repair, replace, remove, alter or disturb any of the suspect area, nor shall WARRANT TO allow anyone else to repair, replace, remove, alter, or disturb any of the effected Geosynthetic area prior to such inspection, or prior to receipt of NWL & G notice that it elects not to inspect, provided WARRANT TO may take emergency action necessary to prevent damage to persons, property, or the environment. A failure to strictly comply with this paragraph shall void the warranty.

d) Any liability incurred by NWL & G pursuant to this Limited Warranty shall be and is hereby limited to repair of the specific area of the liner found to be defective and within the scope of this Warranty. In no event shall NWL & G' liability for repair exceed the value of said repair of the defective area.

e) WARRANT TO agrees that it shall provide NWL & G with clean, dry and unobstructed access to the damaged or defective area in order for NWL & G to perform the inspections and repairs which may be required pursuant to the Warranty. NWL & G shall not be liable for any costs relating to providing access to the suspect area.

The remedies provided to WARRANT TO herein being the exclusive remedies available under the warranty and are intended for the sole benefit of WARRANT TO. Neither the warranty nor any rights hereunder shall be assignable NWL & G shall have no liability under the warranty to third parties or strangers to this agreement. The warranty set forth above is the only warranty applicable to the installation and all other warranties, expressed or implied, including, but not limited to, any warranty of merchantability or fitness for a particular purpose are disclaimed. In no event shall NWL & G be liable for any direct, indirect, incidental, special, or consequential damages for, resulting from, or in the connection with, any loss resulting from the use of the Geosynthetic.

By issuance of this Warranty NWL & G assumes no responsibility whatsoever for and cannot be held liable in any way for any claim, demand, loss, damage or injury arising from, resulting from or connected with any engineering design or characteristic resulting in failure.

Except for the warranty set forth above, no representation or warranty made by any sales or other representative of NWL & G, or any other person, concerning the installation shall be binding upon NWL & G.

WARRANT TO'S failure to pay NWL & G for full contract value, retainage, change orders, or any other project specific invoices will void this warranty unless waived in writing by NWL & G company officer.

Any waiver of the terms and conditions of the Warranty shall be in writing signed by NWL & G. The failure to insist upon strict compliance with any of the terms and conditions contained herein shall not act as a waiver of strict compliance with all of the remaining terms and conditions of the Warranty and shall not operate as a waiver as to any of the terms and conditions of the Warranty as to future claims under the Warranty

NORTHWEST LININGS & GEOTEXTILE PRODUCTS, INC.

BY:

Rod W. Newton, President

7/30/2005

Date

I, a representative of **WARRANT TO**, have read and agree to the terms and conditions of the Warranty.

BY:

Purchaser

Printed Name

Title

Company

Signature

Date

POLY-FLEX LINER
LIMITED WARRANTY

Warranty No.: 05-24-22
Project No.: 250308
Effective Date: 7/30/05

USER:	State Of Oregon Dept. Of Admin. Services	**PROJECT NAME:**	McCormick & Baxter Upland Cap
ADDRESS:	1225 Ferry Street	**DESCRIPTION:**	Landfill Cap
CITY, STATE, ZIP:	Salem, OR 97301	**ADDRESS:**	6900 N. Edgewater Street
		CITY, STATE, ZIP:	Portland, OR 97208

POLY-FLEX, INC. warrants each Poly-Flex Liner to be free from defects in materials and to be able to withstand normal weathering from the date of installation for a period of twenty (20) years for normal use in approved applications.

This Limited Warranty does not include damages or defects in the Poly-Flex Liner resulting from acts of God, casualty or catastrophe including but not limited to: earthquakes, floods, piercing hail, tornados or force majeure. The term "normal use" as used herein does not include, among other things, the exposure of the Poly-Flex Liner to harmful chemicals, abuse of the Poly-Flex Liner by machinery, equipment or people, excessive pressures or stress from any source. This Limited Warranty is intended for commercial use only and is not in effect for a "consumer" as defined in the Magnuson-Moss Warranty Act or any similar federal, state, or local statutes.

Should defects or premature loss of use within the scope of the above Limited Warranty occur, Poly-Flex, Inc. will, at its option, repair or replace the Poly-Flex Liner on a pro-rata basis at the then current price in such manner as to charge the Purchaser/User only for that portion of the warranted life which has elapsed since purchase of the material. Poly-Flex, Inc. will have the right to inspect and determine the cause of any alleged defect in the Poly-Flex Liner and to take appropriate steps to repair or replace the Poly-Flex Liner if a defect exists and is within the term of this Limited Warranty.

Any claim for any alleged breach of this Limited Warranty must be made in writing, by certified mail, to the President of Poly-Flex, Inc. within thirty (30) days after the alleged defect is first noticed. Should the required notice not be given, the defect and all warranties shall be deemed to have been waived by the Purchaser/User, and Purchaser/User shall have no right of recovery against Poly-Flex, Inc. In the event repairs and/or replacements are to be effected, said repairs and/or replacements shall not become due until the area subject to repair and/or replacement of Poly-Flex Liner is available in a clean, dry, unencumbered condition, including without limitation being free from all water, dirt, sludge, residuals, and liquids of any kind.

Poly-Flex, Inc.'s, and its related entities', officers', shareholders',affiliates', agents', assigns', and successors' liability under this Limited Warranty shall in no event exceed the replacement cost of the material for the particular installation. Further, under no circumstances shall Poly-Flex, Inc., and/or its related entities, officers, shareholders, affiliates, agents, assigns and/or successors be liable for any special, direct, indirect, or consequential damages arising from loss of production or any other losses, including losses due to personal injuries and product liability, owing to the failure of the material or improper installation and no allowance will be made for repairs, replacements, or alterations made by the Purchaser/User without the express written consent of an officer of Poly-Flex, Inc.

BY USE OF THIS PRODUCT IT IS AGREED THAT ANY CONTROVERSY OR CLAIM ARISING OUT OF OR RELATING TO SAID USE SHALL BE DECIDED BY BINDING ARBITRATION IN ACCORDANCE WITH THE UNITED STATES ARBITRATION ACT (Title 9, U.S. Code) IN DALLAS, TEXAS. THE ARBITRATION SHALL BE CONDUCTED BY A MUTUALLY AGREEABLE ARBITRATOR. IF THE PARTIES ARE UNABLE TO AGREE UPON AN ARBITRATOR, THEN EACH PARTY SHALL PICK AN INDIVIDUAL QUALIFIED TO SERVE AS AN ARBITRATOR AND THOSE TWO INDIVIDUALS SHALL THEN APPOINT A THIRD ARBITRATOR. THE ARBITRATOR'S AWARD SHALL BE FINAL AND MAY BE CONFIRMED BY THE JUDGMENT OF A STATE OR FEDERAL COURT IN THE JURISIDICTION WHERE THE ARBITRATION OCCURRED. THE ARBITRATOR(S) SHALL HAVE NO POWER OR AUTHORITY TO AWARD EXEMPLARY OR PUNITIVE DAMAGES, OR TO ALTER, AMEND, OR

SUPPLEMENT ANY TERM, CONDITION, OR PROVISION OF THIS AGREEMENT. THE PARTIES CONSENT TO JURISDICTION AND VENUE IN COMPETENT STATE AND FEDERAL COURTS IN DALLAS, TEXAS. EACH PARTY SHALL BEAR ITS OWN ATTORNEY'S FEES, REGARDLESS OF THE OUTCOME OF THE ARBITRATION. ALL COSTS OF ARBITRATION, INCLUDING BUT NOT LIMITED TO FILING FEES, ARBITRATOR(S) FEES, AND STENOGRAPHER FEES, SHALL BE SHARED EQUALLY BY THE PARTIES.

Poly-Flex, Inc. neither assumes nor authorizes any person other than an officer of Poly-Flex, Inc. to assume for it any other or additional liability in connection with the Poly-Flex Liner made the basis of this Limited Warranty. The Limited Warranty on the Poly-Flex Liner herein is given in lieu of all other possible warranties, either express or implied, including warranties of merchantability and of fitness for a particular purpose and by accepting delivery of the material, Purchaser/User waives all other possible warranties, except those specifically given.

The parties expressly agree that the sale of the Poly-Flex Liner is for commercial or industrial use only.

The Poly-Flex Liner Limited Warranty is extended to the Purchaser/User and is non-transferable and non-assignable, without the written consent of an officer of Poly-Flex, Inc.

POLY-FLEX, INC. MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN ABOVE AND HEREBY DISCLAIMS ALL WARRANTIES, BOTH EXPRESS OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

If any provision of this Warranty shall be found to be illegal, invalid, or unenforceable under the present or future laws, such provision shall be fully severable and the remaining provisions shall remain in full force and effect. Any provision of this Warranty held illegal, invalid, or unenforceable shall remain in full force and effect to the extent not so held. In lieu of the provision held illegal, invalid, or unenforceable, there shall be automatically added as part of this Warranty a provision as similar in its terms to such invalid provision as may be possible and may be legal, valid, and enforceable.

I have read and agree to be bound by the terms and conditions of the foregoing warranty. The said warranty shall not be honored until an original dated and signed copy, by an authorized representative of User, has been duly returned to Poly-Flex and until full payment has been made to Poly-Flex.

POLY-FLEX, INC.	USER: ________________
By: Morris E. Jett	By: ________________
Its: **President**	Its: ________________

POLY-FLEX, INC. ________________

2000 W. Marshall Drive ________________

Grand Prairie, TX 75051 ________________

POLY-FLEX GEOCOMPOSITE
LIMITED WARRANTY

Warranty No.: 05-24-22
Project No.: 250308
Effective Date: 7/30/05

USER: State Of Oregon Dept. Of Admin. Services
ADDRESS: 1225 Ferry Street
CITY, STATE, ZIP: Salem, OR 97301

PROJECT NAME: McCormick & Baxter Upland Cap
DESCRIPTION: Landfill Cap
ADDRESS: 6900 N. Edgewater Street
CITY, STATE, ZIP: Portland, OR 97208

POLY-FLEX, INC. warrants each Poly-Flex Geocomposite to be free from defects in materials and to be able to withstand normal weathering from the date of installation for a period of one (1) year for normal use in approved applications.

This Limited Warranty does not include damages or defects in the Poly-Flex Geocomposite resulting from acts of God, casualty or catastrophe including but not limited to: earthquakes, floods, piercing hail, tornados or force majeure. The term "normal use" as used herein does not include, among other things, the exposure of the Poly-Flex Geocomposite to harmful chemicals, abuse of the Poly-Flex Geocomposite by machinery, equipment or people, excessive pressures or stress from any source. This Limited Warranty is intended for commercial use only and is not in effect for a "consumer" as defined in the Magnuson-Moss Warranty Act or any similar federal, state, or local statutes.

Should defects or premature loss of use within the scope of the above Limited Warranty occur, Poly-Flex, Inc. will, at its option, repair or replace the Poly-Flex Geocomposite on a pro-rata basis at the then current price in such manner as to charge the Purchaser/User only for that portion of the warranted life which has elapsed since purchase of the material. Poly-Flex, Inc. will have the right to inspect and determine the cause of any alleged defect in the Poly-Flex Geocomposite and to take appropriate steps to repair or replace the Poly-Flex Geocomposite if a defect exists and is within the term of this Limited Warranty.

Any claim for any alleged breach of this Limited Warranty must be made in writing, by certified mail, to the President of Poly-Flex, Inc. within thirty (30) days after the alleged defect is first noticed. Should the required notice not be given, the defect and all warranties shall be deemed to have been waived by the Purchaser/User, and Purchaser/User shall have no right of recovery against Poly-Flex, Inc. In the event repairs and/or replacements are to be effected, said repairs and/or replacements shall not become due until the area subject to repair and/or replacement of Poly-Flex Geocomposite is available in a clean, dry, unencumbered condition, including without limitation being free from all water, dirt, sludge, residuals, and liquids of any kind.

Poly-Flex, Inc.'s, and its related entities', officers', shareholders',affiliates', agents', assigns', and successors' liability under this Limited Warranty shall in no event exceed the replacement cost of the material for the particular installation. Further, under no circumstances shall Poly-Flex, Inc., and/or its related entities, officers, shareholders, affiliates, agents, assigns and/or successors be liable for any special, direct, indirect, or consequential damages arising from loss of production or any other losses, including losses due to personal injuries and product liability, owing to the failure of the material or improper installation and no allowance will be made for repairs, replacements, or alterations made by the Purchaser/User without the express written consent of an officer of Poly-Flex, Inc.

BY USE OF THIS PRODUCT IT IS AGREED THAT ANY CONTROVERSY OR CLAIM ARISING OUT OF OR RELATING TO SAID USE SHALL BE DECIDED BY BINDING ARBITRATION IN ACCORDANCE WITH THE UNITED STATES ARBITRATION ACT (Title 9, U.S. Code) IN DALLAS, TEXAS. THE ARBITRATION SHALL BE CONDUCTED BY A MUTUALLY AGREEABLE ARBITRATOR. IF THE PARTIES ARE UNABLE TO AGREE UPON AN ARBITRATOR, THEN EACH PARTY SHALL PICK AN INDIVIDUAL QUALIFIED TO SERVE AS AN ARBITRATOR AND THOSE TWO INDIVIDUALS SHALL THEN APPOINT A THIRD ARBITRATOR. THE ARBITRATOR'S AWARD SHALL BE FINAL AND MAY BE CONFIRMED BY THE JUDGMENT OF A STATE OR FEDERAL COURT IN THE JURISIDICTION

WHERE THE ARBITRATION OCCURRED. THE ARBITRATOR(S) SHALL HAVE NO POWER OR AUTHORITY TO AWARD EXEMPLARY OR PUNITIVE DAMAGES, OR TO ALTER, AMEND, OR SUPPLEMENT ANY TERM, CONDITION, OR PROVISION OF THIS AGREEMENT. THE PARTIES CONSENT TO JURISDICTION AND VENUE IN COMPETENT STATE AND FEDERAL COURTS IN DALLAS, TEXAS. EACH PARTY SHALL BEAR ITS OWN ATTORNEY'S FEES, REGARDLESS OF THE OUTCOME OF THE ARBITRATION. ALL COSTS OF ARBITRATION, INCLUDING BUT NOT LIMITED TO FILING FEES, ARBITRATOR(S) FEES, AND STENOGRAPHER FEES, SHALL BE SHARED EQUALLY BY THE PARTIES.

Poly-Flex, Inc. neither assumes nor authorizes any person other than an officer of Poly-Flex, Inc. to assume for it any other or additional liability in connection with the Poly-Flex Geocomposite made the basis of this Limited Warranty. The Limited Warranty on the Poly-Flex Geocomposite herein is given in lieu of all other possible warranties, either express or implied, including warranties of merchantability and of fitness for a particular purpose and by accepting delivery of the material, Purchaser/User waives all other possible warranties, except those specifically given.

The parties expressly agree that the sale of the Poly-Flex Geocomposite is for commercial or industrial use only.

The Poly-Flex Geocomposite Limited Warranty is extended to the Purchaser/User and is non-transferable and non-assignable, without the written consent of an officer of Poly-Flex, Inc.

POLY-FLEX, INC. MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN ABOVE AND HEREBY DISCLAIMS ALL WARRANTIES, BOTH EXPRESS OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

If any provision of this Warranty shall be found to be illegal, invalid, or unenforceable under the present or future laws, auch provision shall be fully severable and the remaining provisions shall remain in full force and effect. Any provision of this Warranty held illegal, invalid, or unenforceable shall remain in full force and effect to the extent not so held. In lieu of the provision held illegal, invalid, or unenforceable, there shall be automatically added as part of this Warranty a provision as similar in its terms to such invalid provision as may be possible and may be legal, valid, and enforceable.

I have read and agree to be bound by the terms and conditions of the foregoing warranty. The said warranty shall not be honored until an original dated and signed copy, by an authorized representative of User, has been duly returned to Poly-Flex and until full payment has been made to Poly-Flex.

POLY-FLEX, INC.	USER: ______________
By: Morris E. Jett	By: ______________
Its: **President**	Its: ______________

POLY-FLEX, INC.

2000 W. Marshall Drive

Grand Prairie, TX 75051

TYPICAL PE3408 PIPING PHYSICAL
* PROPERTIES * HDPE FUSION PIPE

TYPICAL SPECIFICATIONS	ASTM TEST METHOD		NOMINAL VALUE
Density	ASTM D 1505		.955
Melt Index[1]	ASTM D 1238		<.15
Tensile Strength @ Yield (2 in/min)	ASTM D 638		3300 psi
@ Break (2 in/min)	ASTM D 638		4500 psi
Hydrostatic Design Basis @ 23°C (73.4°F)	ASTM D 2837		1600 psi
@ 60°C	ASTM D 2837		800 psi
Elongation @ Break (2 in/min)	ASTM D 638		>800 %
Flexural Modulus[2]	ASTM D 790		120,000 psi
Notched Izod Impact Strength	ASTM D 256		6.0 ft-ibf/in.
Hardness (Shore D)	ASTM D 2240		68
Brittleness Temperature	ASTM D 746		<-180°F
Environmental Stress Crack Resistance[3]	ASTM D 1693		>10,000 hrs.
Environmental Stress Crack Resistance[4]	ATSM D 1693		>5000 hrs.
Piping Ring ESCR[5]	ASTM F 1248		>10,000 hrs.
Notch Tensile (PENT)	ASTM F 1473	@2.4 MPa	>30 hrs.
		@3.00MPa	>100 hrs.
Cell Classification	ASTM D 3350		345464C
Vicat Softening Point	ASTM D 1525		257°F

1 190°C/21600g

2 2% Secant-Method 1

3 Condition B, 10%

4 Condition C

5 Quail Pipe

Industrial: Manufactured in accordance with; ASTM D2513-D3035-F714-API 15LE and/or AWWA C901/C906

Gas: Manufactured in accordance with; ASTM D2513 and API 15LE

HIGH COUNTRY FUSION COMPANY, INC.
PIPE DIMENSION AND WEIGHT CHART

IPS PIPE SIZES		100 PSI SDR 17			90 PSI SDR 19			80 PSI SDR 21			65 PSI SDR 26			50 PSI SDR 32.5		
IPS Pipe Size	Nominal OD (in)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)	Minimum Wall (in)	Average ID (in)	Weight (lbs/ft)
2"	2.375	0.14	2.084	0.42	0.13	2.115	0.38	0.11	2.140	0.35	0.09	2.185	0.28	0.07	2.223	0.23
3"	3.500	0.21	3.072	0.92	0.18	3.117	0.83	0.17	3.153	0.75	0.13	3.220	0.61	0.11	3.276	0.49
4"	4.500	0.26	3.949	1.52	0.24	4.007	1.37	0.21	4.054	1.24	0.17	4.140	1.01	0.14	4.212	0.82
5"	5.563	0.33	4.882	2.32	0.29	4.954	2.09	0.26	5.012	1.90	0.21	5.118	1.55	0.17	5.207	1.25
6"	6.625	0.39	5.814	3.29	0.35	5.900	2.96	0.32	5.969	2.69	0.25	6.095	2.20	0.20	6.201	1.77
8"	8.625	0.51	7.570	5.57	0.45	7.681	5.02	0.41	7.771	4.56	0.33	7.935	3.72	0.27	8.073	3.00
10"	10.750	0.63	9.435	8.65	0.57	9.573	7.79	0.51	9.685	7.09	0.41	9.890	5.78	0.33	10.062	4.66
12"	12.750	0.75	11.190	12.17	0.67	11.354	10.96	0.61	11.487	9.97	0.49	11.730	8.13	0.39	11.934	6.56
14"	14.000	0.82	12.287	14.68	0.74	12.467	13.22	0.67	12.613	12.02	0.54	12.880	9.81	0.43	13.104	7.91
16"	16.000	0.94	14.042	19.17	0.84	14.248	17.27	0.76	14.415	15.70	0.62	14.720	12.81	0.49	14.976	10.33
18"	18.000	1.06	15.798	24.26	0.95	16.029	21.85	0.86	16.217	19.88	0.69	16.560	16.21	0.55	16.848	13.07
20"	20.000	1.18	17.553	29.96	1.05	17.811	26.98	0.95	18.019	24.54	0.77	18.400	20.01	0.62	18.720	16.14
22"	22.000	1.29	19.308	36.25	1.16	19.592	32.64	1.05	19.821	29.69	0.85	20.240	24.21	0.68	20.592	19.52
24"	24.000	1.41	21.064	43.14	1.26	21.373	38.85	1.14	21.623	35.34	0.92	22.080	28.81	0.74	22.464	23.24
26"	26.000	1.53	22.819	50.63	1.37	23.154	45.59	1.24	23.425	41.47	1.00	23.920	33.82	0.80	24.336	27.27
28"	28.000	1.65	24.574	58.71	1.47	24.935	52.88	1.33	25.227	48.10	1.08	25.760	39.22	0.86	26.208	31.63
30"	30.000	1.76	26.329	67.40	1.58	26.716	60.70	1.43	27.029	55.21	1.15	27.600	45.02	0.92	28.080	36.31
32"	32.000	1.88	28.085	76.69	1.68	28.497	69.07	1.52	28.830	62.82	1.23	29.440	51.23	0.98	29.952	41.31
34"	34.000	2.00	29.840	86.57	1.79	30.278	77.97	1.62	30.632	70.92	1.31	31.280	57.83	1.05	31.824	46.63
36"	36.000	2.12	31.595	97.06	1.89	32.059	87.41	1.71	32.434	79.51	1.38	33.120	64.83	1.11	33.696	52.28
1000MM	39.250	2.31	34.448	115.37	2.07	34.953	103.91	1.87	35.362	94.51	1.51	36.110	77.07	1.21	36.738	62.15
42"	42.000	2.47	36.861	132.11	2.21	37.402	118.98	2.00	37.840	108.22	1.62	38.640	88.25	1.29	39.312	71.16
48"	48.000	2.82	42.127	172.55	2.53	42.745	155.40	2.29	43.246	141.34	1.85	44.160	115.26	1.48	44.928	92.95
54"	54.000	3.18	47.393	218.38	2.84	48.088	196.68	2.57	48.651	178.89	2.08	49.680	145.88	1.66	50.544	117.63
1600MM	63.000	NA	NA	NA	NA	NA	NA	3.00	56.760	243.49	2.42	57.960	198.55	1.94	58.968	160.11

NA= CURRENTLY NOT AVAILABLE. PLEASE CHECK IF NEEDED AS TECHNOLOGY CHANGES REGULARLY

INNOVATIVE DRAINAGE AND WATER CONSERVATION SOLUTIONS

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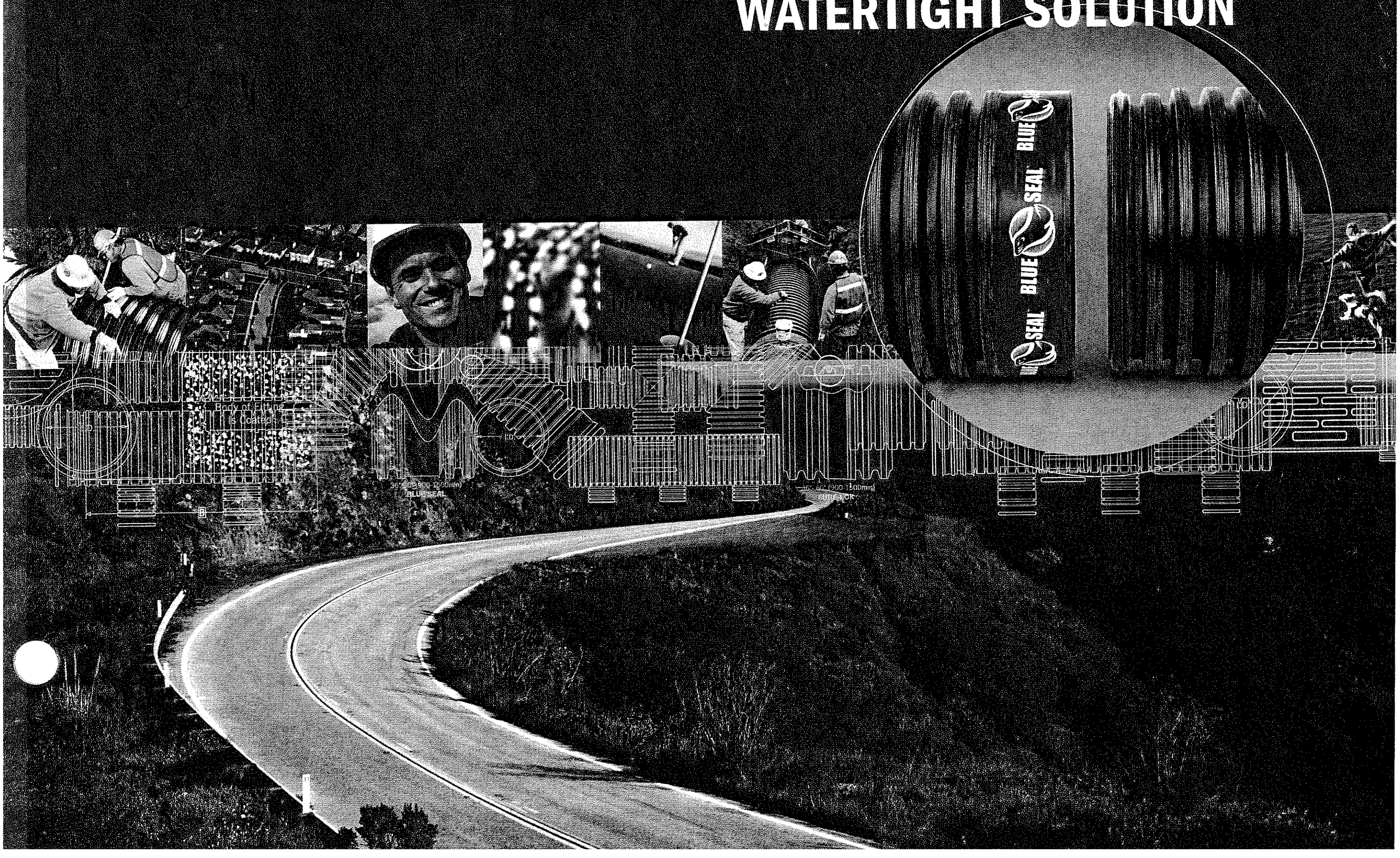
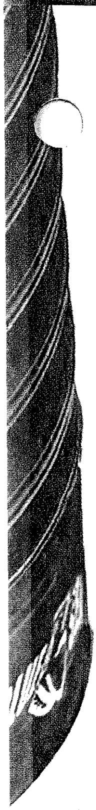
BLUE SEAL®

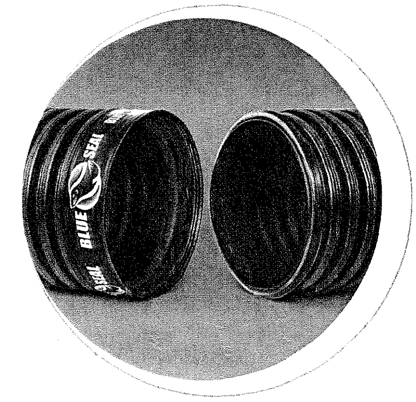
THE REVOLUTIONARY WATERTIGHT SOLUTION





BLUE SEAL FEATURES AND BENEFITS

- A versatile, cost-effective system available in a complete range of sizes from 12" - 60" (300 - 1500mm) diameters.
- This high strength, lightweight composite system requires less labor time and equipment resulting in faster installation and reduced costs.
- Bell and gasket corrugation reinforcement provides uniform support not found in the corrugated polyethylene pipe industry.
- Fast bell-and-spigot joint assembly with unsurpassed structural integrity.
- 20' (6m) nominal lengths resulting in fewer joints.
- HDPE pipe provides superior resistance to prevent rusting, deterioration or crumbling.



ADVANCED WATERTIGHT TECHNOLOGY ENSURES LONG-TERM SERVICE RELIABILITY

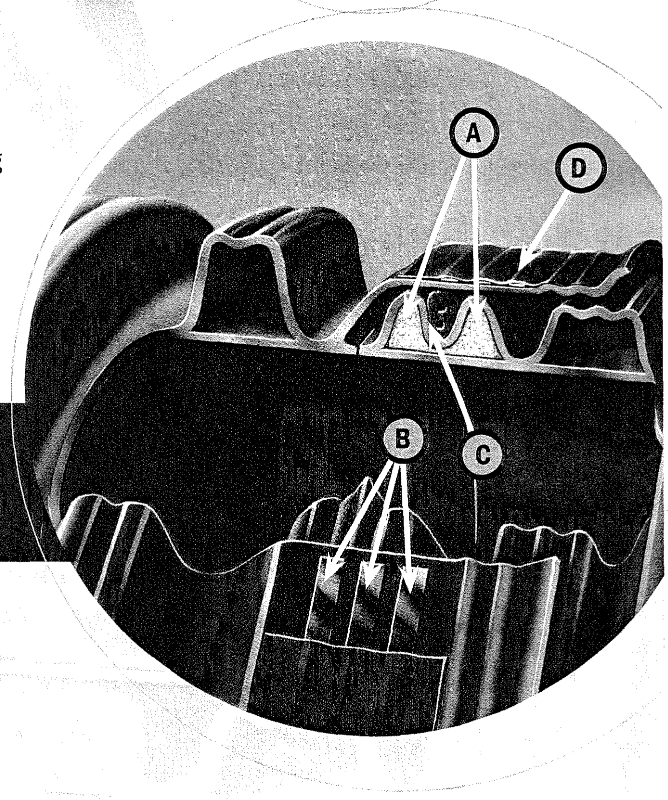
BLUE SEAL addresses EPA Phase II Best Management Practices to:

- Provide a visible commitment to better water quality, minimizing environmental impact.
- Prevent contamination of soil and local waters by eliminating leaking joints from harmful substances such as sediment from construction runoff, lawn care products or automobile emissions.
- Avoid possible joint infiltration of sands and fines resulting in sinkholes and differential settlement to adjacent structures.
- Avoid possible contamination of storm water from leaking sanitary connections.
- Reduce infiltration of vegetation into the joint which can result in joint blockage.
- Reduce soil migration.
- Reliable for sanitary sewer trunk lines.

FOR RELIABLE WATERTIGHT DRAINAGE SOLUTIONS, IT'S BLUE SEAL

For gravity flow watertight applications, count on BLUE SEAL to give you long-lasting performance and peace of mind. You'll recognize BLUE SEAL by its blue product identification.

Hancor Service: Hancor representatives and engineers are committed to providing you with the answers to all your questions, including specifications, installation, backfill recommendations and more.



REINFORCED BELL-AND-SPIGOT (SEE ILLUSTRATION)

Expanding structural foam **(A)**

Expansion resistance rings **(B)**

ASTM F477 Gasket **(C)**

Protective wrap **(D)**

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BLUE SEAL® Bury it and forget it.

BLUE SEAL® PIPE SPECIFICATIONS

Diameter: 12" - 60" (300 - 1500mm)
Length:
- 20' (6m) for 12" - 30" (300 - 750mm) diameter pipe.
- 20.5' (6.24m) for 36" - 60" (900 - 1500mm) diameter pipe.

Specifications: AASHTO M294, Type S and AASHTO MP7, Type S.
Joint Performance: Watertight
Joining System: Bell-and-spigot
Gasket: Polyisoprene meeting ASTM F477
Fittings and Accessories: Hancor offers a full line of fittings for all diameters of Hancor pipe.

SCOPE

This specification describes 12" - 60" (300 - 1500mm) Hancor BLUE SEAL pipe for use in gravity flow applications.

PIPE REQUIREMENTS

BLUE SEAL pipe shall have a smooth interior and annular exterior corrugations.
- 12" - 48" (300 - 1200mm) shall meet AASHTO M294, Type S.
- 60" (1500mm) shall meet AASHTO MP7, Type S.
- Manning's "n" value for use in design shall be no less than 0.010.

MATERIAL PROPERTIES

Pipe and fitting material shall be high-density polyethylene meeting ASTM D3350 minimum cell classification 335400C. The pipe material shall be Hancor Resin 8™, which is a high stress crack resistant material evaluated using the single point notched constant tensile load (SP-NCTL) test. Average SP-NCTL test specimens must exceed 24 hrs. with no test result less than 17 hrs. The closed cell structural foam core must have a free rise density no less than 3 lbs/ft^3 and compressive strength no less than 20 lbs/in^2.

JOINT PERFORMANCE

Pipe shall be joined with the BLUE SEAL joint meeting the requirements of AASHTO M294, or AASHTO MP7. 12" - 60" (300 - 1500mm) shall be watertight according to the requirements of ASTM D3212. Gaskets shall be made of polyisoprene, meeting the requirements of ASTM F477 with the addition that the gaskets shall not have any visible cracking when tested according to ASTM D1149 after 72 hours exposure in 50 PPHM ozone at 104° Fahrenheit. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. 12" - 30" (300 - 750mm) bells shall include a reinforcing rib at the flare OD to assure meeting roundness tolerances and enhance proper joint assembly. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 24" - 60" (600 - 1500mm) diameters shall have a reinforced bell-and-spigot, including a bell tolerance device. The bell tolerance device shall be installed by the manufacturer and covered with a protective wrap. The gasket corrugation shall be reinforced with a closed cell structural foam core.

WATERTIGHT FIELD TEST PERFORMANCE

To assure watertight field performance, verification may be accomplished using ASTM F 1417 or ASTM C 969 test procedures. Appropriate safety precautions must be used when field testing any pipe material.

FITTINGS

Fittings shall be in accordance to AASHTO M294 or AASHTO MP7. Fabricated fittings shall be welded at all accessible interior and exterior junctions.

QUALITY ASSURANCE

All corrugated polyethylene pipe meeting or exceeding AASHTO M294 or MP7 shall only be provided by manufacturers listed by the Plastic Pipe Institute (PPI) as having met the requirements of the PPI sponsored third-party certification program. All AASHTO M294 and MP7 pipe shall be clearly marked with a certification program mark or logo representing the supplied pipe is in compliance with all applicable standards.

INSTALLATION

Installation shall be in accordance with ASTM D2321, with the exception that minimum cover in trafficked areas for 12" - 48" (300 - 1200mm) diameters shall be 1 ft. (0.3m), and for 60" (1500mm) diameters, the minimum cover shall be 1.5 ft. (0.5m).

Pipe I.D., in. (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Pipe O.D., in. (mm)	14.2 (361)	17.7 (450)	21.5 (546)	28.4 (721)	36.0 (914)	41.4 (1052)	48.0 (1219)	55.0 (1397)	67.3 (1709)
Flare O.D., in. (mm)	15.4 (391)	19.6 (498)	23.9 (607)	29.9 (759)	37.9 (963)	43.6 (1107)	50.8 (1290)	57.4 (1458)	73.7 (1872)
Pitch, in. (mm)	2.0 (51)	2.4 (61)	3.0 (76)	4.0 (102)	4.0 (102)	4.6 (117)	5.8 (147)	5.8 (147)	7.8 (198)
Approx. Weight* lb/20 ft. stick (kg/6m stick)	70 (32)	100 (46)	130 (59)	220 (100)	330 (150)	400 (182)	500 (227)	597 (260)	861 (315)

*One stick is 20' (6m) for 12"-30" (300-750mm) diameter pipe and 20.5' (6.24m) for 36"-60" (900-1500mm) diameter pipe.

All sales of Hancor product are subject to a limited warranty and purchasers are solely responsible for installation and use of Hancor products and determining whether a product is suited for any specific needs. Please consult a full copy of Hancor's Terms and Conditions for Sale for further details.

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Direct Contact

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Fax 888-FAX PIPE (329-7473) 24 hours a day

Application Engineering
For technical questions, call
800-2HANCOR (242-6267), ext. 809

Electronic Media

Web Site
Find market- and application-specific information and the latest industry news at our On-Line Pipeline – www.hancor.com

HANCOR BLUE SEAL® PIPE SPECIFICATIONS

Scope
This specification describes 12- through 60-inch (300 to 1500 mm) Hancor BLUE SEAL® pipe for use in gravity flow applications.

Pipe Requirements
BLUE SEAL® pipe shall have a smooth interior and annular exterior corrugations.

- 12- through 60-inch (300 to 1500 mm) shall meet AASHTO M294, Type S.
- Manning's "n" value for use in design shall be 0.010 to 0.012.

Joint Performance
Pipe shall be joined with the BLUE SEAL® joint meeting the requirements of AASHTO M294.

12- through 60-inch (300 to 1500 mm) shall be watertight according to the requirements of ASTM D3212. Gaskets shall be made of polyisoprene meeting the requirements of ASTM F477 with the addition that the gaskets shall not have any visible cracking when tested according to ASTM D1149 after 72 hour exposure in 50 PPHM ozone at 104°F (40° C). Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. 12- through 30-inch (300 to 750 mm) bells shall include a reinforcing rib at the flare O.D. to assure meeting roundness tolerances and enhance proper joint assembly. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

24- through 60-inch (600 to 1500 mm) diameters shall have a reinforced bell & spigot including a bell tolerance device. The bell tolerance device shall be installed by the manufacture and covered with a protective wrap. The bell tolerance device shall be capable of withstanding 5% strain without evidence of splitting cracking or delamination. The spigot shall include a gasket seat that is reinforced with a closed cell structural foam core capable of maintaining long-term gasket pressure. The closed cell structural foam core must have a free rise density no less than 1.5 lbs/ft^3 (24 kg/m^3) and compressive strength no less than 20 lbs/in^2 (320 kg/m^2)

Watertight Field Test Performance
To assure watertight field performance verification may be accomplished using ASTM F 1417 or ASTM C 969 test procedures. Appropriate safety precautions must be used when field testing any pipe material.

Fittings
Fittings shall conform to AASHTO M294. Fabricated fittings shall be welded at all accessible interior and exterior junctions.

Material Properties
Virgin material for pipe and fitting production shall be high-density polyethylene conforming with the minimum requirements of cell classification 335400C as defined and described in ASTM D3350. The virgin pipe material shall be Hancor Resin 8™, which is a slow crack resistant material evaluated using the notched constant ligament-stress (NCLS) test according to the procedure described in AASHTO M294, Section 9.5. Average NCLS test specimens must exceed 24 hrs. with no test result less than 17 hrs.

Quality Assurance
All corrugated polyethylene pipe meeting or exceeding AASHTO M294 shall only be provided by manufactures having an ISO 9001:2000 central quality lab and a quality control – quality assurance system based on ISO 9001:2000 standards. All AASHTO M294 pipe shall be clearly marked with the Resin 8 mark or logo representing the supplied pipe is manufactured with resins meeting or exceeding the material requirements of AASHTO M294 and having a minimum 50-year tensile strength of not less than 900 psi.

Installation
Installation shall be in accordance with ASTM D2321 and Hancor's published installation guidelines, with the exception that minimum cover in trafficked areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot. (0.3 m) and for 54- and 60-inch (1350 and 1500 mm) diameters, the minimum cover shall be 1.5 ft. (0.5 m). Contact your local Hancor representative or visit our website at www.hancor.com for a copy of the latest installation guidelines.

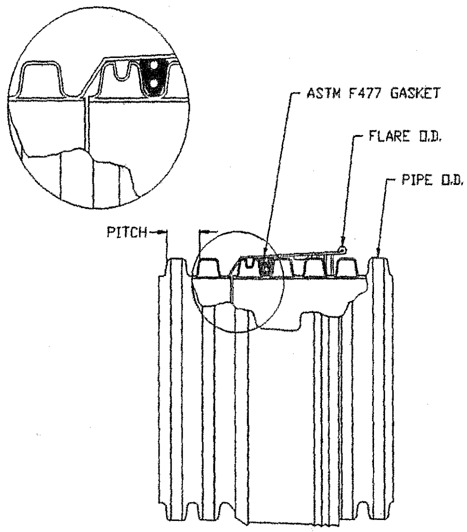
BLUE SEAL® JOINT SYSTEM

(Joint configuration & availability subject to change without notice.)

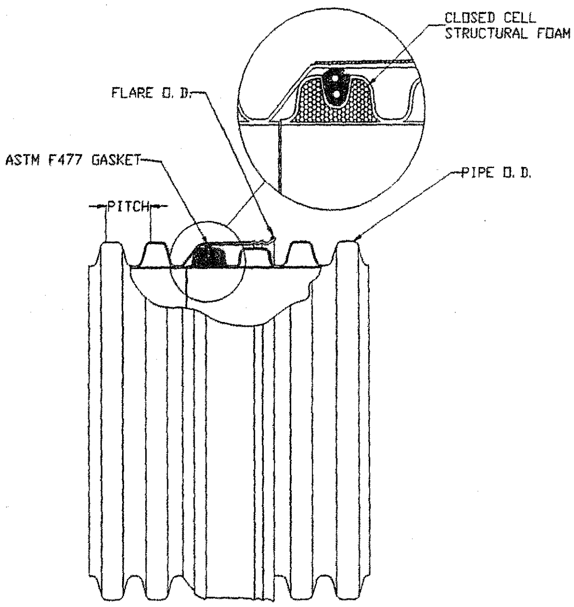
Pipe Dimensions

	Nominal Diameter, in (mm)									
Pipe I.D. in. (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	54* (1350)	60 (1500)
Pipe O.D. in. (mm)	14.2 (361)	17.7 (450)	21.5 (546)	28.4 (721)	36.0 (914)	41.4 (1052)	48.0 (1219)	55.0 (1397)	61.0 (1549)	67.3 (1709)
Flare O.D. in. (mm)	15.4 (391)	19.6 (498)	23.9 (607)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pitch in. (mm)	2.0 (51)	2.4 (61)	3.0 (76)	4.0 (102)	4.0 (102)	4.6 (117)	5.8 (147)	5.8 (147)	7.8 (198)	7.8 (198)

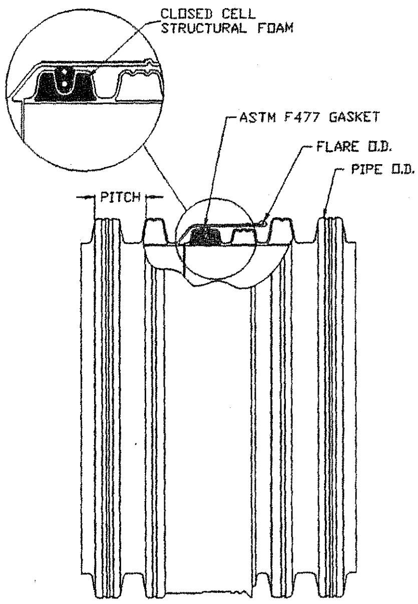
*Check with sales representative for availability by region.



12"-18" (300-450mm)



24"-30" (600-750mm)



36"-60" (600-1500mm)

HANCOR SURE-LOK® WT PIPE SPECIFICATIONS

Scope
This specification describes 4- through 10-inch (100 to 250 mm) Hancor Sure-Lok WT pipe for use in non-pressure drainage applications.

Pipe Requirements
Sure-Lok WT pipe shall have a smooth interior and annular exterior corrugations.

- 4- through 10-inch (100 to 250 mm) shall meet AASHTO M252, Type S.
- Manning's "n" value for use in design shall be 0.010 to 0.012.

Joint Performance
Pipe shall be joined with the Sure-Lok joint meeting the requirements of AASHTO M252. The joint shall be watertight according to the laboratory requirements of ASTM D3212.

Gaskets shall be made of polyisoprene meeting the requirements of ASTM F477 with the addition that the gaskets shall not have any visible cracking when tested according to ASTM D1149 after 72 hour exposure in 50 PPHM ozone at 104° F (40° C).

Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly.

Fittings
4- through 10-inch (100 to 250 mm) fittings shall conform to AASHTO M252.

Material Properties
Virgin material for pipe and fitting production shall be high density polyethylene conforming with the minimum requirements of cell classification as defined and described in ASTM D3350.

Installation
Installation shall be in accordance with ASTM D2321 and Hancor's published installation guidelines; with the exception that minimum cover in trafficked areas shall be one-foot (0.3 m). Contact your local Hancor representative or visit our website at www.hancor.com for a copy of the latest installation guidelines.

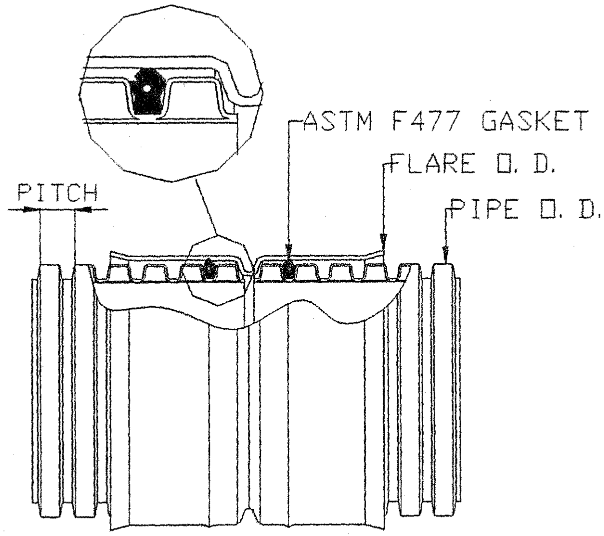
Pipe Dimensions

Nominal Pipe I.D.	in (mm)	4 (100)	6 (150)	8 (200)	10* (250)
Approx. Pipe O.D.	in (mm)	4.7 (119)	6.9 (175)	9.4 (239)	11.9 (303)
Approx. Pitch	in (mm)	0.6 (16)	0.7 (19)	1.0 (26)	13.1 (333)

*Check with sales representative for availability.

SURE-LOK® WT JOINT SYSTEM

(Joint configuration & availability subject to change without notice.)



4"-10" (100-250mm)

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HI-Q® PIPE
HIGH-CAPACITY PERFORMANCE

THE PERFORMANCE YOU EXPECT. THE INNOVATIONS YOU NEED.

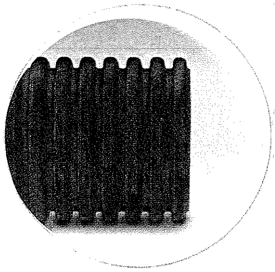
With over 110 years experience, Hancor has provided expert knowledge and innovative product solutions proven in a wide range of field drainage applications. The recent development of large diameter pipe is only one example of our commitment to providing superior products and improved performance. Our HDPE pipe delivers superior value while providing physical strength and structural design that just cannot be matched by metal or concrete.

HI-Q PIPE IS PERFECT FOR THE FOLLOWING APPLICATIONS:

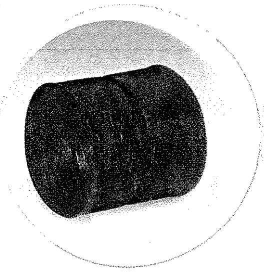
- Culverts
- Cross, Slope or Edge Drains
- Pond Overflows
- Parking Lot Drainage
- Retention/Detention Systems
- Storm Sewers
- Sports Playing Fields
- Golf Courses

FEATURES & BENEFITS

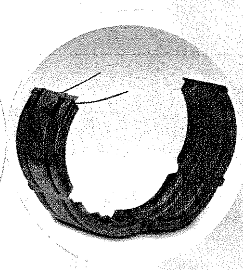
- Adaptable to silt- or soil-tight joint performance requirements – silt-tight (gasketed) or soil-tight (non-gasketed) split coupler and external snap couplers are available.
- Available in 20' (6.1m) or longer lengths, resulting in fewer joints – pipe can easily be cut to the desired length in the field.
- Easy-to-handle, safe, lightweight pipe requires less labor and equipment for faster installation and reduced costs.
- HS-25 (Highway traffic loads) rated with a minimum of 12" (0.3m) of cover for 4" - 30" (100 - 750mm) diameters.
- Provides superior resistance to chemicals, road salts, motor oil and gasoline – will not rust, deteriorate or crumble.
- Withstands repeated freeze/thaw cycles and continuous sub-zero temperatures.
- Superior hydraulics-smooth interior will ensure no debris or sediment build-up.



4"-30" (100-750mm)



4"-8" (100-200mm)
Snap Coupler



8"-30" (200-750mm)
Split Coupler

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HI-Q® PIPE SPECIFICATIONS

Diameter: 4" - 30" (100 - 750mm)
Length: 20' (6.1m)
Specifications: AASHTO M252 Type S, AASHTO M294 Type S
Joint Performance: silt-tight; soil-tight
Joining System: External Split or Snap Coupler
Gasket: Synthetic rubber, meeting ASTM D1056 Grade 2A2
Fittings and Accessories: Hancor manufactures a full complement of fittings for all diameters of Hancor pipe.

SCOPE

This specification describes 4" - 30" (100 - 750mm) Hi-Q pipe for use in nonpressure drainage applications.

REQUIREMENTS

Hi-Q pipe shall have a smooth interior and annular exterior corrugations.

- 4" - 10" (100 - 250mm) shall meet AASHTO M252, Type S.
- 12" - 30" (300 - 750mm) shall meet AASHTO M294, Type S.
- Manning's "n" value for use in design shall not be less than 0.010.

JOINT PERFORMANCE

Pipe shall be joined with coupling bands or snap couplers covering at least two full corrugations on each side of the joint. Standard (non-gasketed) connections shall meet the soil-tightness requirements of the AASHTO Standard Specification for Highway Bridges, Section 26, paragraph 26.4.2.4(e). Silt-tight (gasketed) connections shall be available in 8"- 30" (200 - 750mm) diameters and shall incorporate a closed-cell synthetic expanded rubber gasket meeting the requirements of ASTM D1056 Grade 2A2. Gaskets shall be installed by the pipe manufacturer.

FITTINGS

4" - 10" (100 - 250mm) fittings shall conform to AASHTO M252, while 12" - 30" (300 - 750mm) fittings shall conform to AASHTO M294.

MATERIAL PROPERTIES

Pipe and fitting material shall be high density polyethylene meeting ASTM D3350 minimum cell classification 324420C for 4" - 10" (100 - 250mm) diameters or 335420C for 12" - 30" (300 - 750mm) diameters.

INSTALLATION

Installation shall be in accordance with ASTM D2321 with the exception that minimum cover in trafficked areas shall be one foot (0.3m).

Nominal Pipe I.D., in. (mm)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)
Approx. Pipe O.D., in. (mm)	4.7 (119)	6.9 (175)	9.4 (239)	11.9 (303)	14.2 (361)	17.7 (450)	21.5 (546)	28.4 (721)	36.0 (914)
Approx. Pitch, in. (mm)	0.6 (16)	0.7 (19)	1.0 (26)	1.7 (43)	2.0 (51)	2.4 (61)	3.0 (76)	4.0 (102)	4.0 (102)
Approx. Weight lbs/stick (kg/stick)	10 (5)	20 (9)	30 (14)	42 (19)	70 (32)	100 (46)	130 (59)	220 (100)	330 (150)
Perforations	4" - 8" (100 - 200mm) diameters are available with perforations								

Direct Contact

Customer Service
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Fax 888-FAX PIPE (329-7473) 24 hours a day

Application Engineering
For technical questions, call
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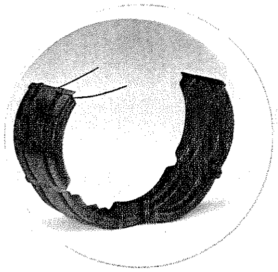
HEAVY DUTY PIPE

THE PERFORMANCE YOU EXPECT. THE INNOVATIONS YOU NEED.

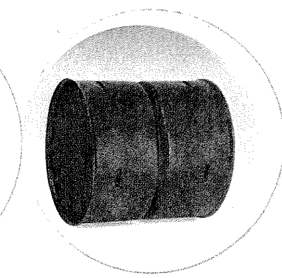
With over 110 years experience, Hancor has provided expert knowledge and innovative product solutions proven in a wide range of field drainage applications. Our HDPE pipe delivers superior value while providing physical strength and structural design that just cannot be matched by metal or concrete.

HEAVY DUTY PIPE IS PERFECT FOR THE FOLLOWING APPLICATIONS:

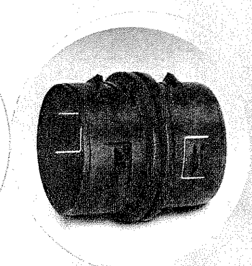
- Culverts
- Paths and Walkway Drains
- Landscape/Subdrainage
- Parking Lots
- Field Drainage
- Grain Aeration
- Waterway Terracing
- Slope, Edge, Foundations
- Downspouts/Roof Drainage
- Sports Playing Fields
- Golf Courses
- Land Reclamation
- Pond Overflows and Dams
- Irrigation Ditch Enclosures



8" Split Band Coupler



4" - 8" External Snap Coupler

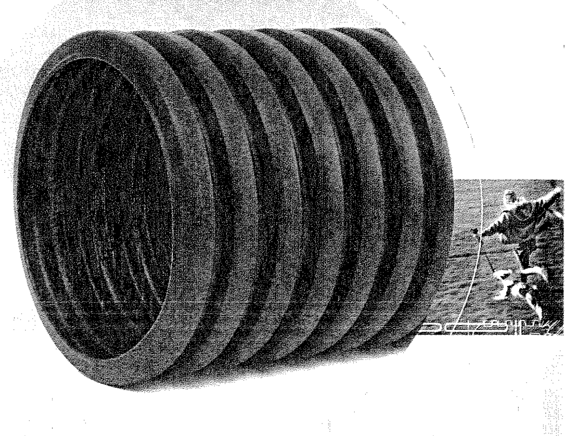


3" - 8" Internal Snap Coupler

FEATURES & BENEFITS

- Available in varying stick and coil lengths, depending on the diameter. Longer lengths result in fewer joints.
- Easy-to-handle, safe, lightweight pipe requires less labor and equipment for faster installation and reduced costs.
- AASHTO HS-25 (Highway traffic loads) rated with a minimum of 12" (0.3m) of cover for 3" - 8" (75 - 200mm) diameters.
- Provides superior resistance to chemicals, road salts, motor oil and gasoline – will not rust, deteriorate or crumble.
- Withstands repeated freeze/thaw cycles and continuous sub-zero temperatures.

Hancor Service: Hancor representatives and engineers are committed to providing you with the answers to all your questions, including specifications, installation, backfill recommendations and more.



Hancor®
Technology • Innovation • Solutions™

HEAVY DUTY PIPE SPECIFICATIONS

Diameter: 3" - 8" (75 - 200mm)

Length: 10' - 20' (3 - 6m) sticks, 100' - 4,900' (30 - 1470m) coils, depending on the diameter

Specifications: ASTM F405, ASTM F667

Joint Performance: silt-tight; soil-tight

Joining System: Internal, External Snap or Split Band Couplers

Gasket: Synthetic rubber, meeting ASTM D1056 Grade 2A2

Fittings and Accessories: Hancor manufactures a full complement of fittings for all diameters of Hancor pipe.

SCOPE

This specification describes 3" - 8" (75 - 200mm) Heavy Duty pipe for use in nonpressure drainage applications.

REQUIREMENTS

Heavy Duty pipe shall have annular interior and exterior corrugations.

- 3" - 6" (75 - 150mm) shall meet ASTM F405.
- 8" (250mm) shall meet ASTM F667.
- For 10" - 24" (250 - 600mm) diameter pipe, see AASHTO pipe.

JOINT PERFORMANCE

Pipe shall be joined with internal or external couplers, or coupling bands covering at least two full corrugations on each end of the pipe. Standard (non-gasketed) connections shall meet the soil-tightness requirements of the AASHTO Standard Specification for Highway Bridges, Section 26, paragraph 26.4.2.4(e). Silt-tight (gasketed) connections shall incorporate a closed-cell synthetic expanded rubber gasket meeting the requirements of ASTM D1056 Grade 2A2. Gaskets shall be installed on the connection by the pipe manufacturer.

FITTINGS

Fittings shall conform to ASTM F405 or ASTM F667.

MATERIAL PROPERTIES

Pipe and fitting material shall be high density polyethylene meeting the testing requirements of ASTM D3350 minimum cell classification 324420C.

INSTALLATION

Installation shall be in accordance with ASTM D2321 with the exception that minimum cover in trafficked areas shall be one foot (0.3m).

Nominal Pipe I.D., in. (mm)	3 (75)	4 (100)	5 (125)	6 (150)	8 (200)
Approx. Pipe O.D., in. (mm)	3.6 (91)	4.6 (117)	5.9 (150)	7.0 (178)	9.5 (241)
Approx. Pitch, in. (mm)	0.7 (18)	0.7 (18)	0.7 (18)	0.7 (18)	1.0 (25)
Approx. Weight lbs/20ft stick (kg/6m stick)	4 (2.0)	6 (3.0)	10 (5.0)	14 (6.0)	22 (10.0)
Perforations	All diameters are available in plain, perforated or perforated with wrap styles.				

*One stick is 20' (6m) for 3" - 8" (75 - 200mm).
Diameter sizes 10" - 24" (250 - 600mm) offered in AASHTO single wall pipe.

Direct Contact

Customer Service
888-FOR PIPE (367-7473)
Fax 888-FAX PIPE (329-7473) 24 hours a day

Application Engineering
For technical questions, call
800-2HANCOR (242-6267), ext. 809

Electronic Media

Web Site
For further details on product specifications, visit the Design Aids section of our On-Line Pipeline:
www.hancor.com

Hancor 401 Olive St., Findlay, OH 45840

HANCOR HEAVY DUTY PIPE SPECIFICATION

Scope
This specification describes 3- through 24-inch (75 to 600 mm) Hancor Heavy Duty pipe for use in non-pressure drainage applications.

Pipe Requirements
Hancor Heavy Duty pipe shall have annular interior and exterior corrugations.

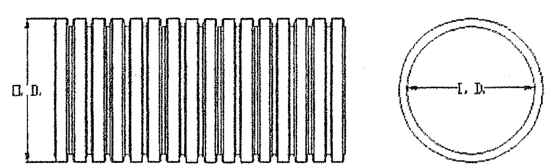
- 3- through 6-inch (75 to150 mm) shall meet ASTM F405;
- 8- through 24-inch (200 to 600 mm) shall meet ASTM F667.

Joint Performance
Pipe shall be joined with internal or external couplers, or coupling bands covering at least two full corrugations on each end of the pipe. Standard connections shall meet the soil-tightness requirements of the AASHTO Standard Specification for Highway Bridges, Section 26, paragraph 26.4.2.4(e). Silt-tight (gasketed) connections shall incorporate a closed-cell synthetic expanded rubber gasket meeting the requirements of ASTM D1056 Grade 2A2. Gaskets shall be installed on the coupling bands by the pipe manufacturer.

Fittings
Fittings shall conform to ASTM F405 or ASTM F667.

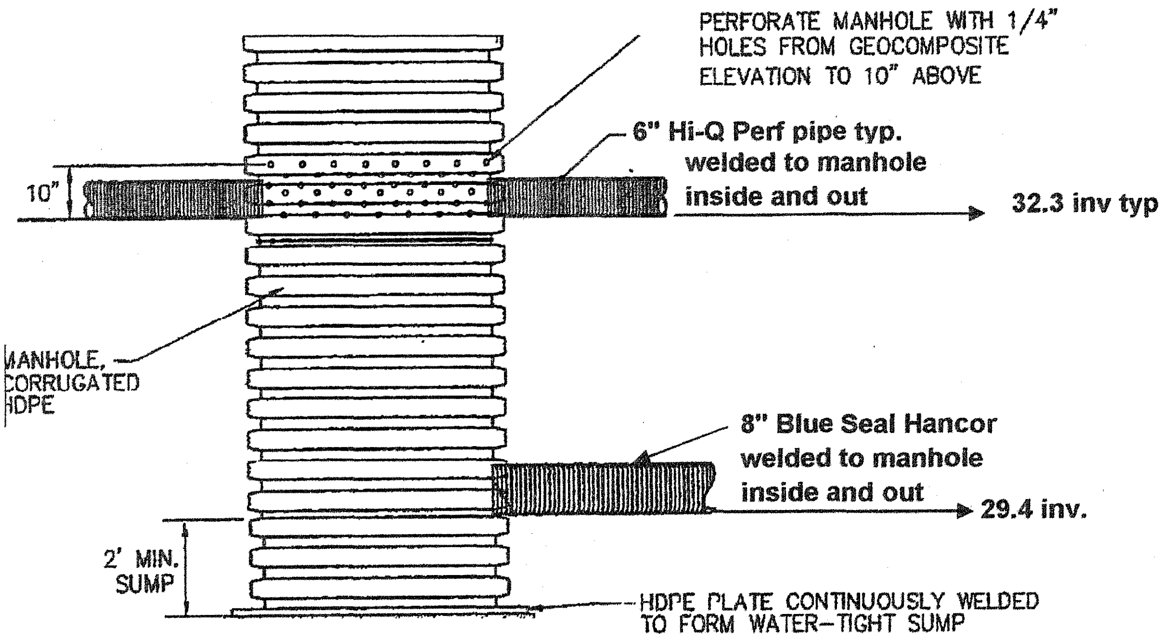
Material Properties
Pipe and fitting material shall be high density polyethylene conforming with the minimum requirements of cell classification 324410C as defined and described in ASTM D3350; or ASTM D1248 Type III, Class C, Category 4, Grade P33.

Installation
Installation shall be in accordance with ASTM D2321 and Hancor's published installation guidelines with the exception that minimum cover in trafficked areas shall be one foot (0.3m). Contact your local Hancor representative or visit our website at www.hancor.com for a copy of the latest installation guidelines.



	Nominal Diameter, in. (mm)									
Pipe I.D. in. (mm)	3 (75)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)
Pipe O.D. in. (mm)	3.6 (91)	4.6 (117)	5.6 (142)	7.0 (178)	9.5 (241)	12.0 (305)	14.2 (361)	17.7 (450)	21.5 (546)	28.4 (721)
Pitch in. (mm)	0.7 (18)	0.7 (18)	0.7 (18)	0.7 (18)	1.0 (25)	1.6 (41)	2.0 (51)	2.4 (61)	3.0 (76)	4.0 (102)
Perforations	All diameters available with or without perforations.									

OK

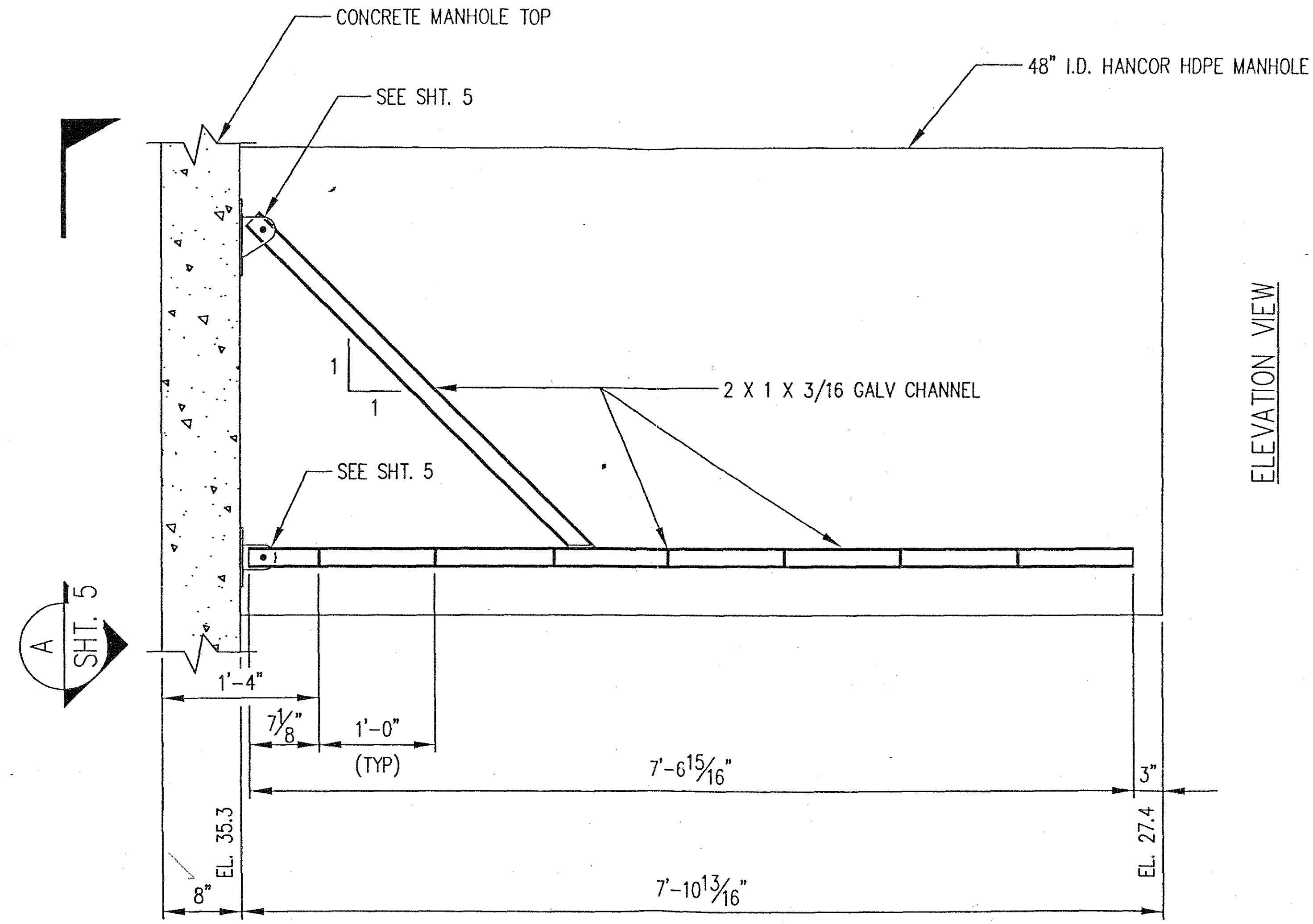


MH-A
48" I.D.
Top Elevation 35.3
Bottom Elevation 27.4

Notes:
Liner by others
Manhole Flange by others
Conveyance pipe by others

Project	McCormick & Baxter Creosoting Co
LOCATION:	Portland, Oregon
BID #:	768005059
SCALE:	NONE
DATE:	5/9/05
DRAWN BY:	Susan McCullough
CHECKED BY:	
APPR. BY:	
DRAWING NUMBER: 05092005 MH-A	

Hancor®
Technology · Innovation · Solutions™
PO BOX 1047, 401 OLIVE STREET, FINDLAY OH 45839-1047
CUSTOMER SERVICE 1-800-242-6267 FAX 1-888-329-7473



This fabrication drawing and the associated material list have been prepared in accordance with H.D. Fowler Company's interpretation of the subject project contract drawings and specifications available for use at the time of issue. The intent being that this drawing and the associated material list detail the material requirements as completely and accurately as possible based on the available information. Approval of this drawing and the associated material list constitutes acceptance of H.D. Fowler Company's interpretation of the material requirements for the systems as detailed. Only the material as described in the associated material list will be ordered in the quantities listed for the fabrication of the systems as detailed. Material shown in the plan and/or section views but not listed in the associated material list will not be provided as a part of the fabrication.

GENERAL NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS, DETAILS, AND DESCRIPTIONS PRIOR TO "ISSUED FOR FABRICATION" REVISION RELEASE.
2. FABRICATION DRAWINGS ARE BASED ON THE INFORMATION AVAILABLE TO H.D. FOWLER AT THE TIME OF ISSUE.

LEGEND:
CL = CLASS
FL = FLANGE
PE = PLAIN END
RGE = RIGID GROOVE END
FGE = FLEXIBLE GROOVE END

REV	DATE	DESCRIPTION
A	08/08/05	ISSUED FOR REVIEW

ONE INCH

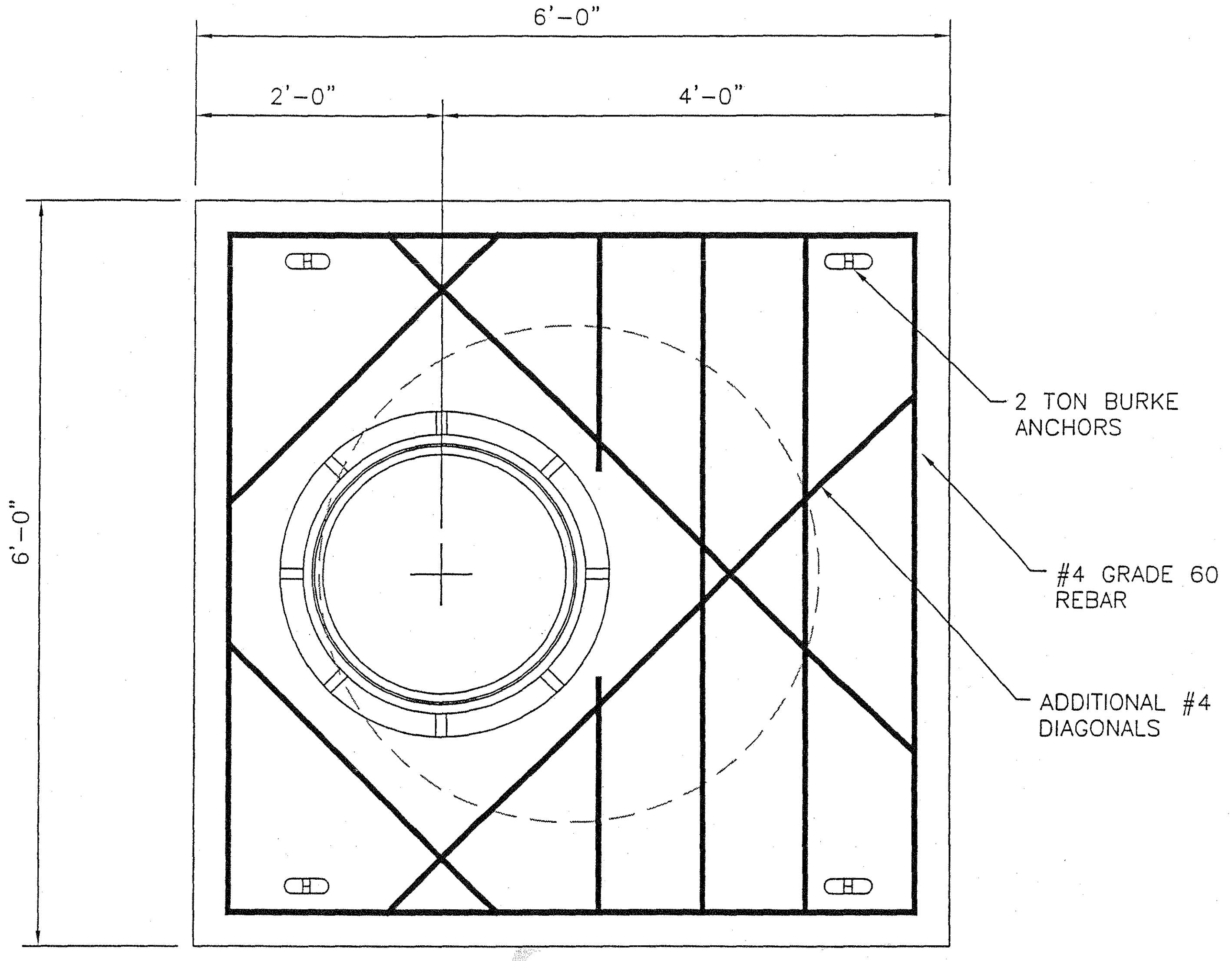
AT FULL SCALE
IF NOT ONE INCH
SCALE ACCORDINGLY

H.D. FOWLER COMPANY

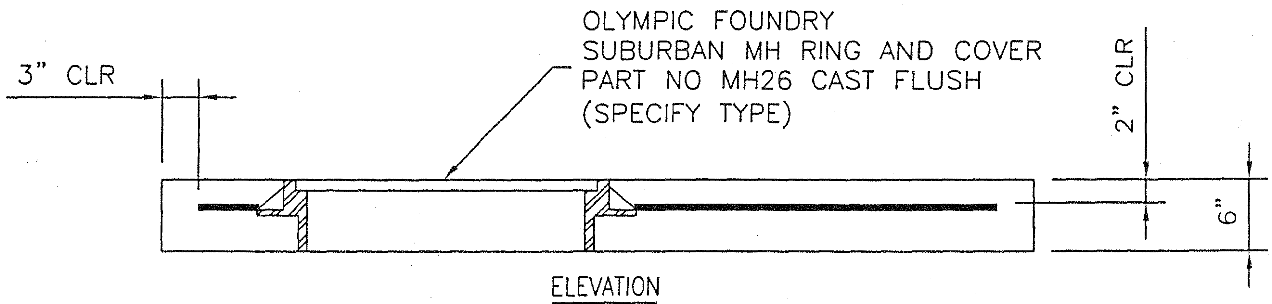
MANHOLE LADDER
MH-A

McCORMICK & BAXTER CREOSOTIN

SCALE: 1"=1'-0" | SHEET: 1 OF 7 | DATE:



PLAN



ELEVATION

PRECAST

CONCRETE PAD

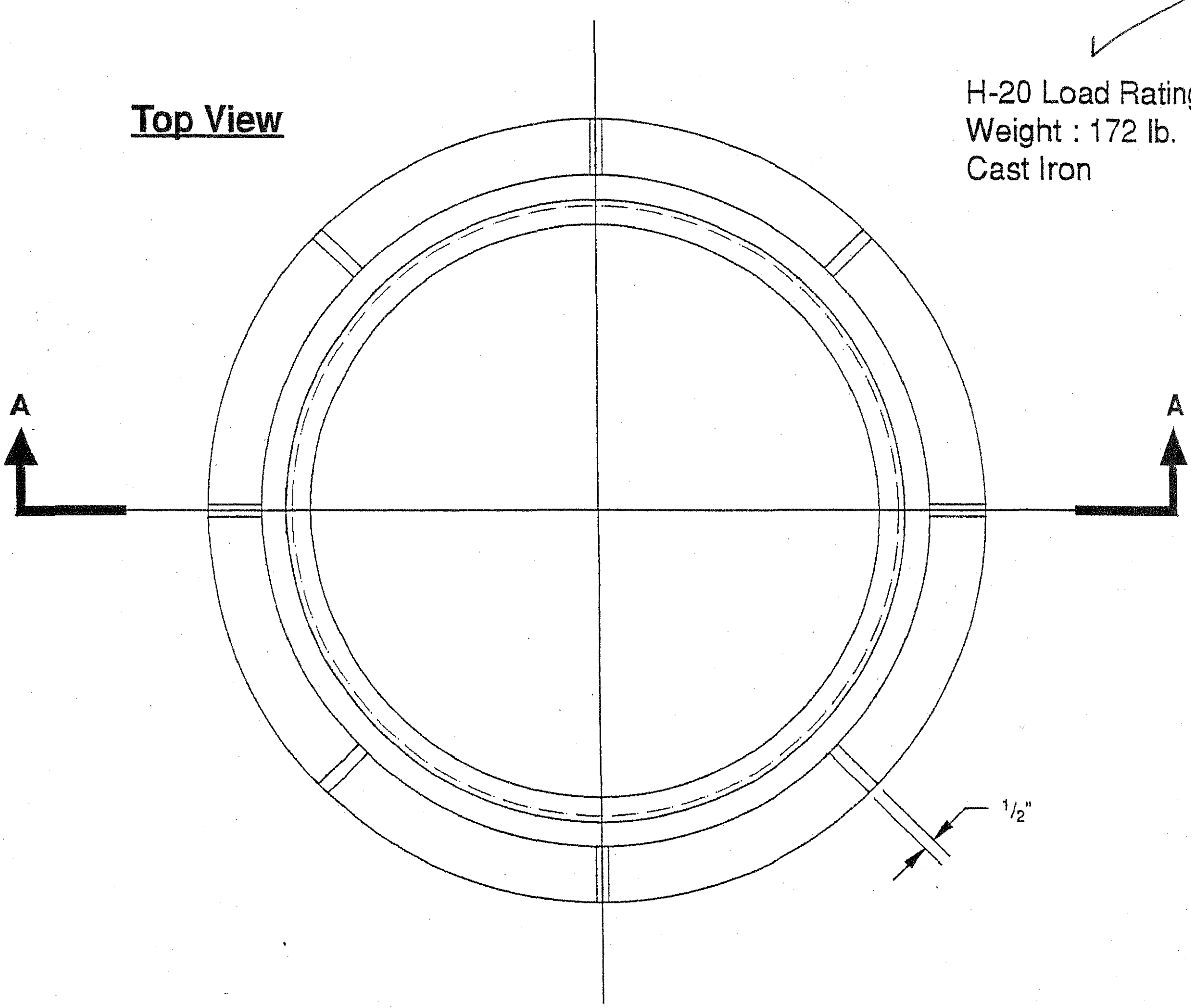
SCALE: 3/4" = 1'–0"

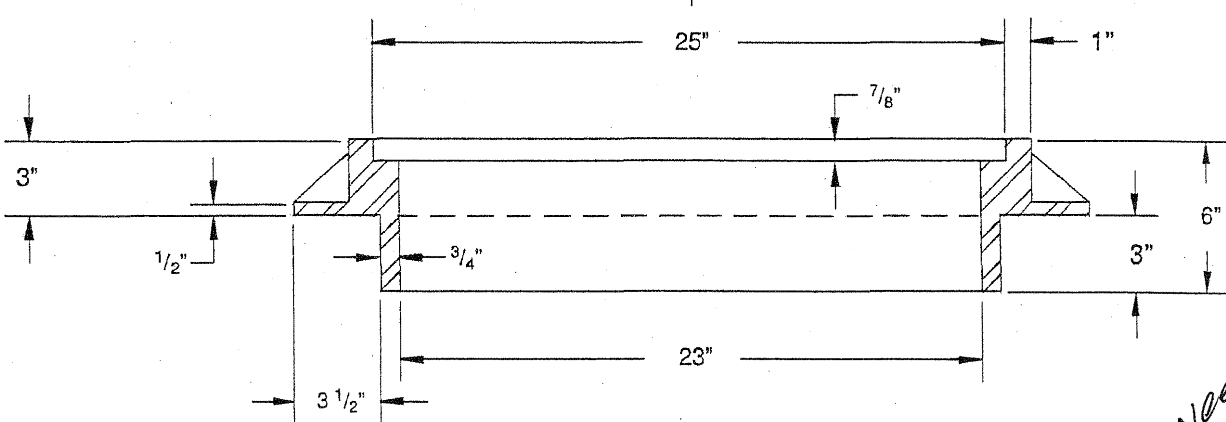
Hanson
Hanson Pipe & Products
755 NE COLUMBIA BOULEVARD
PORTLAND, OREGON 97211
(503) 285-8391
FAX (503) 286-0603

McCORMICK–BAXTER CREOSOTE SITE–2			
CONCRETE PAD		CONTRACTOR APPROVAL	
	DRAWN TC	05–11–05	H20
	CHECKED PG	05–11–05	

Top View

H-20 Load Rating
Weight : 172 lb.
Cast Iron



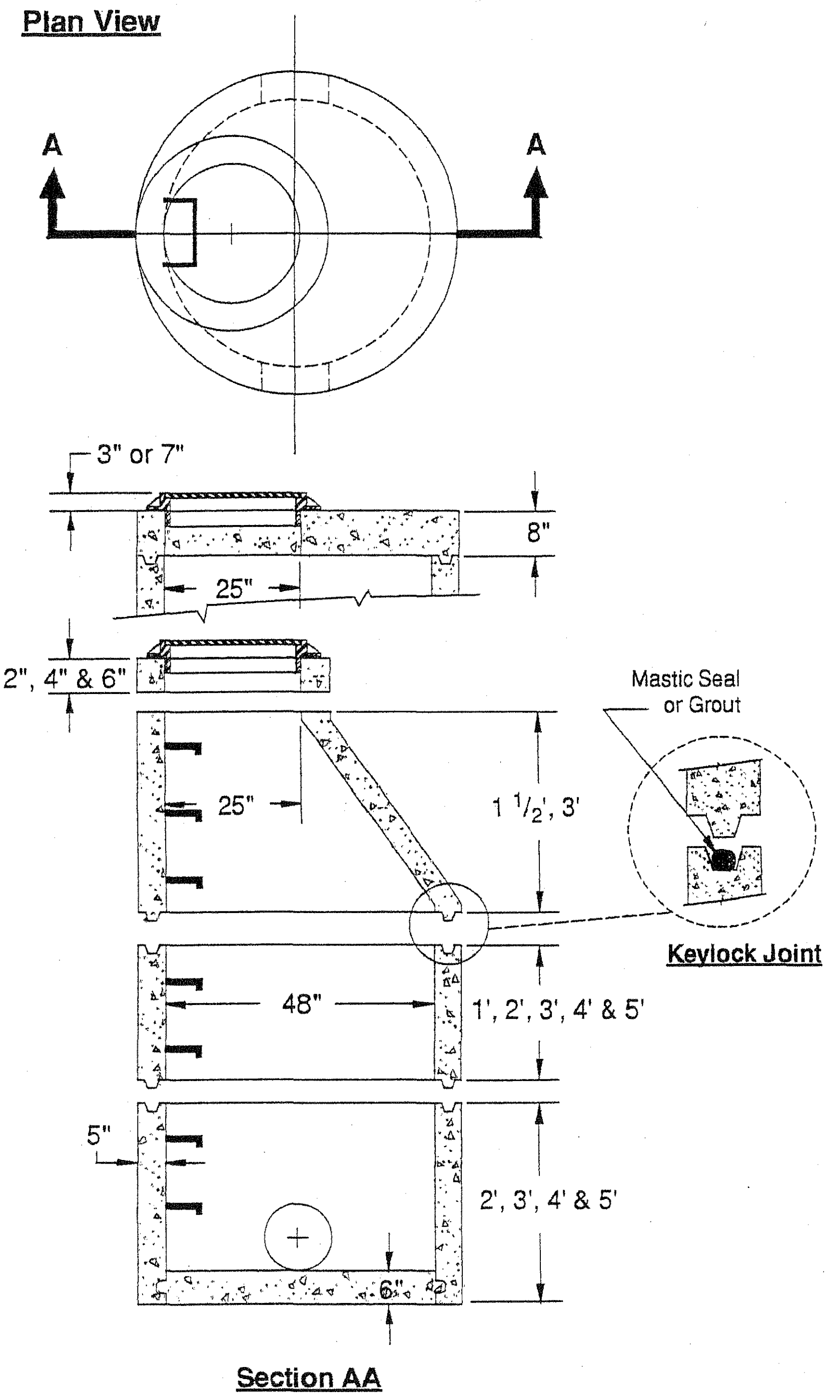


Section AA

Need Tamperproof statement meets spec

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PAGE	DATE	
Suburban Manhole Frame	17	7-01-04	Hanson



Top Unit

Cast iron frame and covers are available in a 3" Suburban or 7" Standard.

Grade adjustment rings available in 2", 4" & 6".

Concentric or eccentric cones or flat top optional.

Flat top slabs come with 25" openings offset to one side or centered in slab.

Reinforcing - 0.12 in^2/layer/LF minimum.

Section

Sections are available in heights of 1' to 5'.

Steel Reinforced Polypropylene Steps are installed as required, location varies per specifying agency.

Circumferential wall reinforcing is 0.12 in^2/LF minimum.

Base Unit

Base units are available in 2', 3', 4' and 5' heights.

Reinforcing is 0.15 in^2/LF minimum.

All units meet or exceed ASTM C-478.

Pipe Penetrations

Cored holes or blockouts available as required.

Maximum hole size is 36".

Minimum distance between holes is 8".

Weights

48" x 2' Base - 3,200 lbs.
additional footage - 920 lbs. per ft.
48" Sections - 920 lbs. per ft.
48" x 8" Flat Slab Top - 1,900 lbs.
48" x 18" Top Cone - 1,580 lbs.
48" x 36" Top Cone - 3,180 lbs.

OK

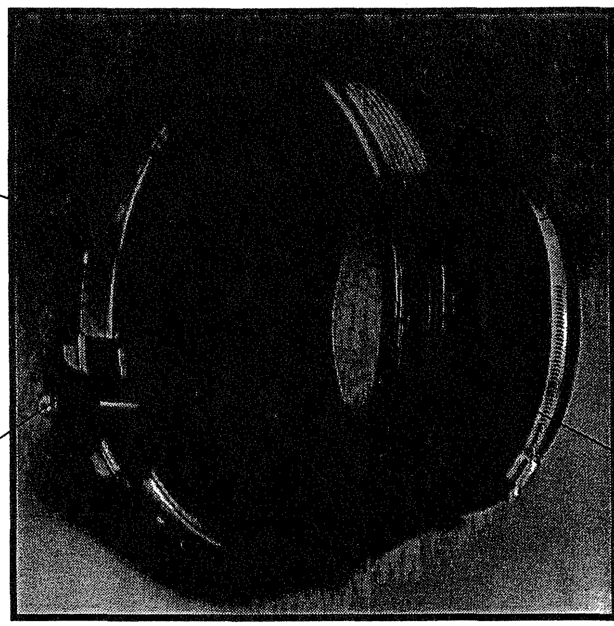
-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PAGE	DATE	
48" Keylock Manhole	6	7-01-04	Hanson

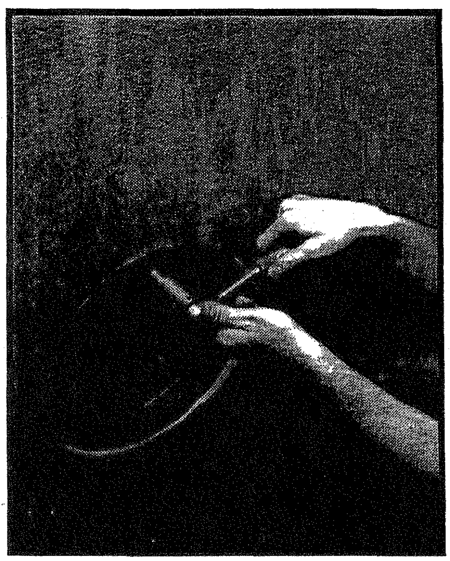
KOR-N-SEAL® I & II

FLEXIBLE PIPE-TO-MANHOLE CONNECTORS

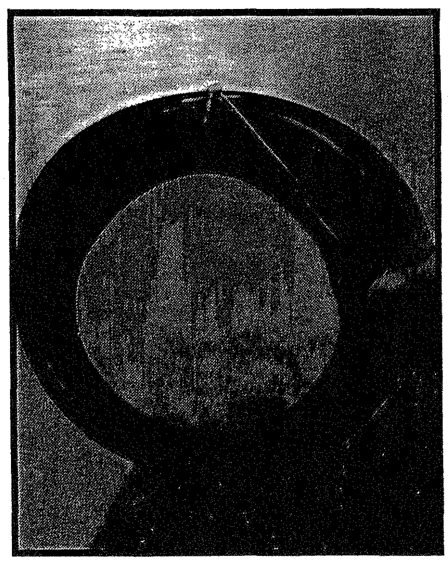
SPECIFICATION SHEET



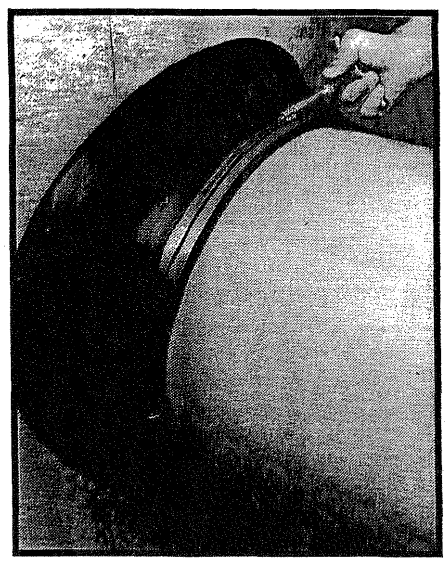
KOR-N-SEAL I - WEDGE KORBAND CONNECTOR ASSEMBLY



Install Kor-N-Seal I - Wedge Korband With Socket Wrench & Torque Limiter



Install Kor-N-Seal II - Wedge Korband With Standard Torque Wrench



Install Pipe Clamp(s) With T-Handle Torque Wrench

NPC Inc.
250 Elm Street P.O. Box 301
Milford, N.H. 03055, U.S.A.

Tel: (603) 673-8680 (800) 626-2180
Fax: (603) 673-7271

OK

KOR-N-SEAL®

Form SKNS 4/96

Medium Box Series General Detail

Model 1730-12

* VAULTS FOR CLEANOUTS AND GAS VENTS

1730 Polymer Concrete Cover

Weight: Polymer Concrete 55 lbs.
Part No: 1730-PC

1730 Meter Reading Cover

Weight: HDPE 10 lbs.
Part No: 1730-5L Captive L-Bolt Lock
Weight: Cast Iron 2 lbs.
Part No: 1730-6 Cast Iron Reader

1730 T-Cover

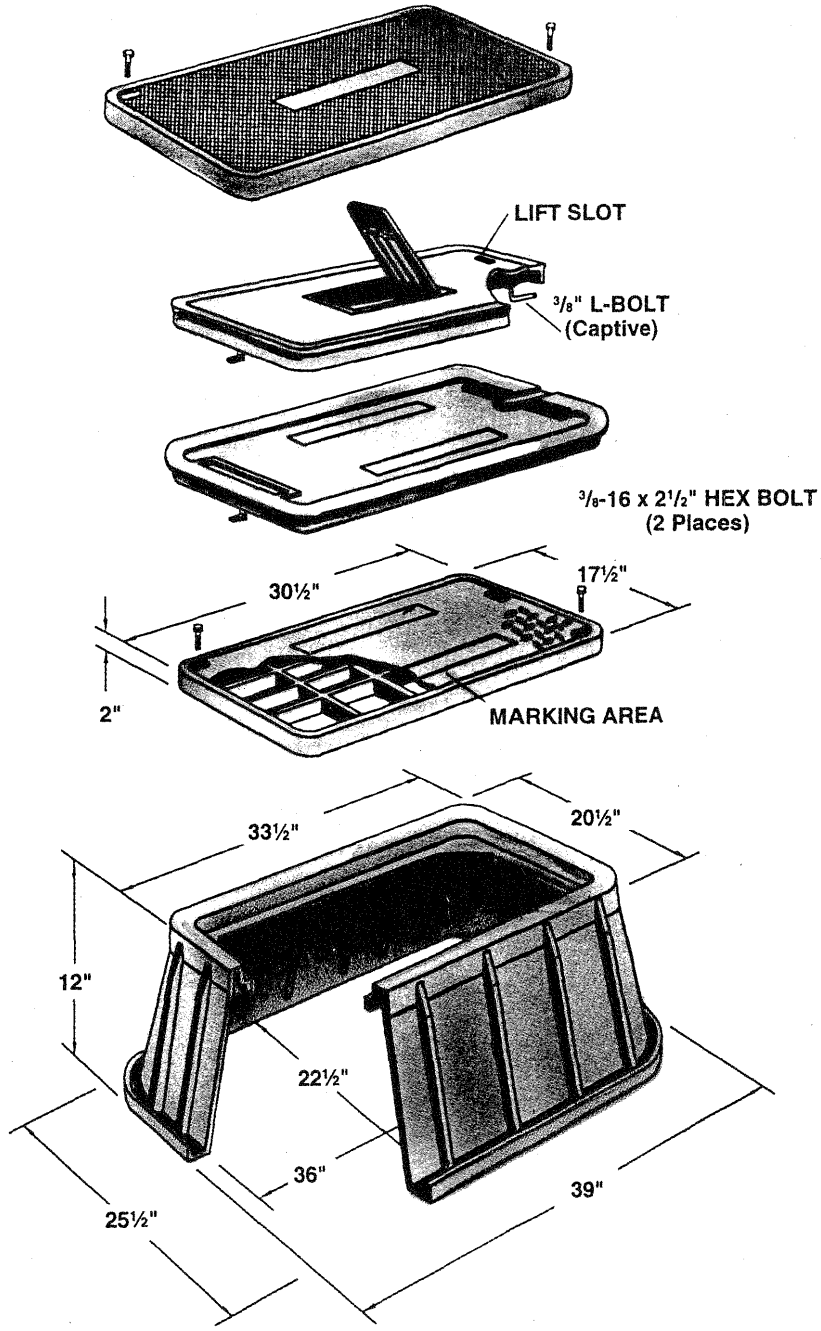
Weight: HDPE 10 lbs.
Part No: 1730-4L Captive L-Bolt Lock
1730-4B Bolt Down

1730 Bolt Down Cover

Weight: HDPE 10 lbs.
ABS 12 lbs.
Part No: 1730-3B

1730 Box

Weight: HDPE 19 lbs.
Part No: 1730-12



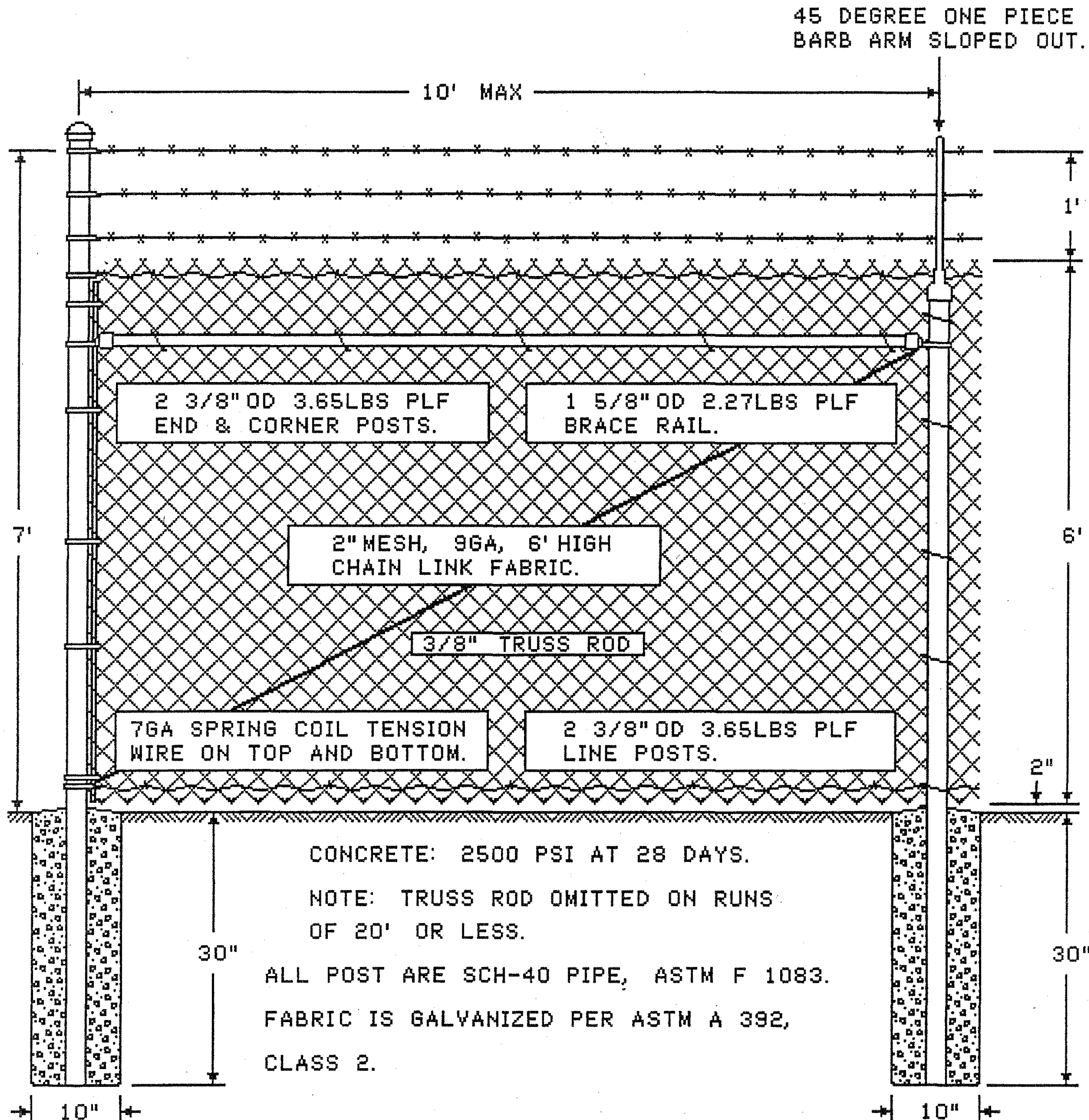
Colors Available:
Green or Grey
Black on Special Order

* NOTE: For use in non-vehicular traffic installations only. We do NOT recommend installation in concrete or asphalt.
Weights and dimensions may vary slightly. Revision Date 1/1/98

CARSON INDUSTRIES, INC.
Glendora, California
Toll-Free: (800) 735-5566
Phone: (909) 592-6272
Fax: (909) 592-7971

CARSON INDUSTRIES, LTD.
Roscommon, Ireland
Phone: 35 39 03-25922
Fax: 35 39 03-25921

DETAIL OF 7' HIGH (6' FABRIC WITH 3 STRANDS OF BARB WIRE)
CHAIN LINK FENCE WITH TOP AND BOTTOM TENSION WIRE.



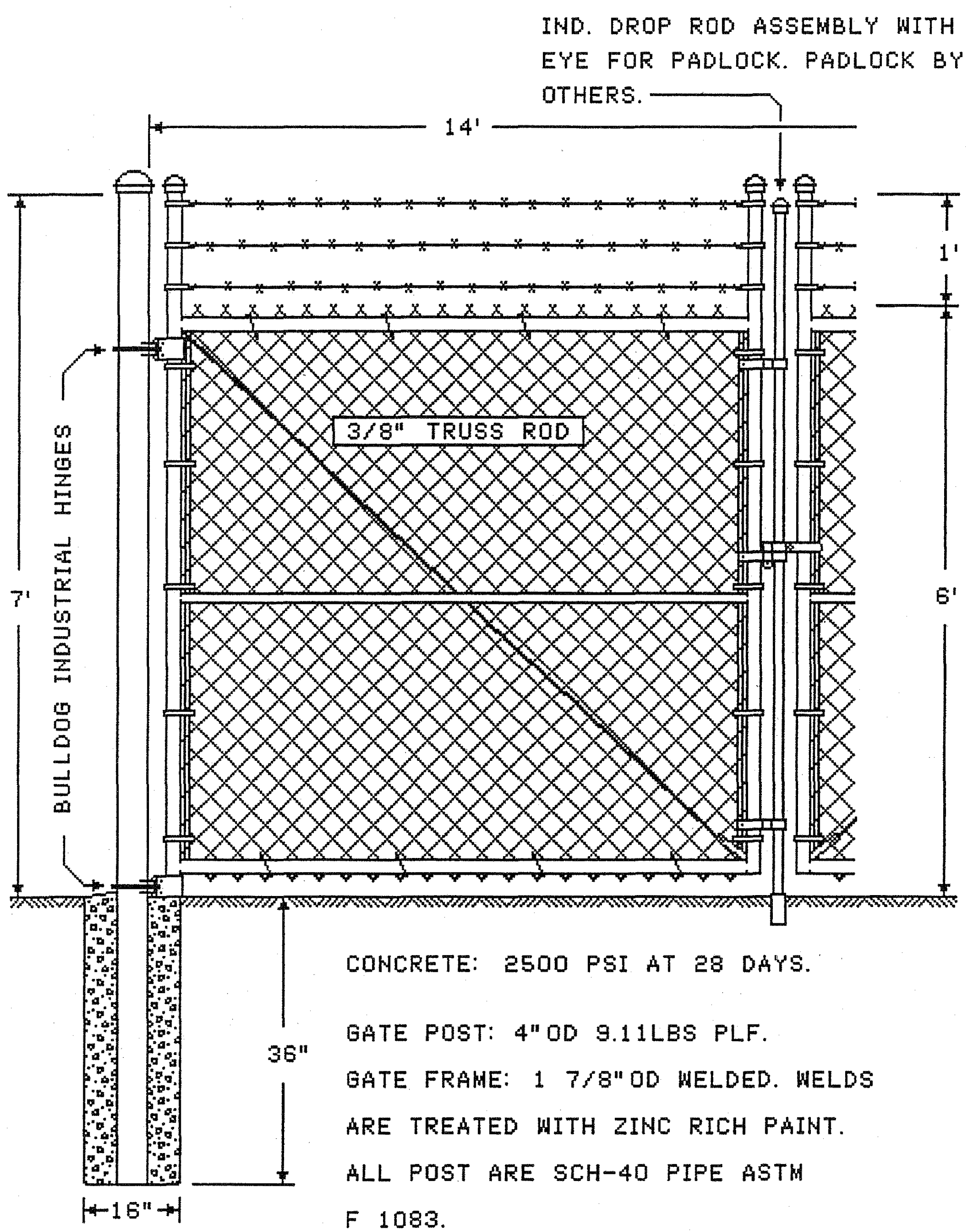
NOTE: WE WILL REMOVE AND REUSE EXISTING CHAIN LINK FABRIC WHERE FEASIBLE. EXISTING POSTS TO BE REMOVED BY OTHERS.

WILLAMETTE FENCE CO., INC.

Willamette Fence Co.,Inc.
11304 N E Marx
Portland, OR 97220
(503) 285-2761 FAX 255-6410

WILDER CONSTRUCTION COMPANY PROJECT: McCORMICK AND BAXTER UPLAND CAP	DRAWN BY: GLJ 10-14-1994	SCALE: NONE	PAGE:
	REVISED: GLJ 6/20/2005	FILE: EGGE	1 of 2

DETAIL OF 7' HIGH X 14' WIDE DOUBLE SWING GATE - 6' HIGH FABRIC WITH 3 STRANDS OF 4PT, 5", 12 1/2GA BARBED WIRE OVER THE TOP. 5 EACH.



CONCRETE: 2500 PSI AT 28 DAYS.

GATE POST: 4"OD 9.11LBS PLF.

GATE FRAME: 1 7/8"OD WELDED. WELDS ARE TREATED WITH ZINC RICH PAINT.

ALL POST ARE SCH-40 PIPE ASTM F 1083.

FABRIC: 2"MESH, 9GA, 6' HIGH ZINC COATING PER ASTM A 392, CLASS 2.

WILLAMETTE FENCE CO., INC.

Willamette Fence Co.,Inc.
11304 N E Marx
Portland, OR 97220
(503) 285-2761 FAX 255-6410

WILDER CONSTRUCTION COMPANY PROJECT: McCORMICK AND BAXTER UPLAND CAP	DRAWN BY: GLJ 07-06-1994	SCALE: NONE	PAGE:
	REVISED: GLJ 6/20/2005	FILE: NESK-2	2 of 2

COLLOID ENVIRONMENTAL TECHNOLOGIES COMPANY
P.O. Box 428 • Lovell, Wyoming 82431
(307) 548-6521 • Fax (307) 548-6413

October 28, 2005

Ecology & Environment
c/o John Montgomery
333 SW 5th Avenue
Portland, OR 97204

Dear John Montgomery,

Enclosed is a copy of the Technical Data Sheet for Organoclay Reactive Core Mat.

Thank you,

Roger B. Wilkerson
Quality Assurance
CETCO
92 Hwy 37
Lovell, Wyoming 82431
(800) 322-1149 ext.423
(307) 548-6927 fax
e-mail: roger.wilkerson@cetco.com

CETCO® LINING TECHNOLOGIES

Technical Data

ORGANOCLAY REACTIVE CORE MAT™

MATERIAL PROPERTY	TEST METHOD	VALUE
ORGANOCLAY		
Bulk Density Range	CETCO Test Method	45 – 55 lbs/ft^3
Moisture Content	ASTM D 2216	$\leq$ 5%
Hydraulic Conductivity	ASTM D 2434	1 x 10^{-2} cm/sec minimum
Oil Adsorption Capacity	CETCO Test Method	0.5 lb of oil per lb of clay minimum
Quaternary Amine Content	TGA – CETCO Test Method	25 – 33% quat loading @ 800°C
FINISHED RCM PRODUCT		
Organoclay Mass per Area	CETCO Test Method	0.8 lb/ft^2
Mat Grab Strength	ASTM D4632	90 lbs. MARV

An aqueous permeable composite of geotextiles and a non-swelling granular clay compound that reliably adsorbs oil and similar organics from water.
Roll Size: 15' x 75'
Packaged on 4" PVC core tubes, and wrapped with 6 mil polyethylene plastic packaging.

C Biological Assessment Addendum (III)

BIOLOGICAL ASSESSMENT ADDENDUM (III)

MCCORMICK AND BAXTER CREOSOTING COMPANY PORTLAND, OREGON UPLAND SOIL CAP REMEDY

State of Oregon
Department of Environmental Quality

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

January 2005

U.S. ENVIRONMENTAL PROTECTION AGENCY
OREGON STATE DEPARTMENT OF ENVIRONMENTAL QUALITY

DOCUMENT PURPOSE

This document is the Environmental Protection Agency's (EPA) evaluation of potential effects from a proposed Federal action on plant and animal species covered under the Endangered Species Act (ESA). EPA intends this document to demonstrate substantive compliance with ESA pursuant to the requirements of the National Contingency Plan (NCP) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The Federal action addressed in this document is the construction of an upland soil cap on the Federal Superfund site known at the McCormick and Baxter Creosoting Company, Portland, Oregon. This action is one of several remedial actions being taken under CERCLA to significantly reduce the potential risk to human health and/or ecological receptors resulting from potential exposure to contaminants present in sediment, groundwater, and soils at the project area.

EPA has designated the lead in implementing the actions contained within the CERCLA Record of Decision (ROD) for the site to the Oregon Department of Environmental Quality (DEQ), although these remain Federal actions with Federal funding. DEQ, however, will be responsible for the long-term operation and maintenance of the remedies.

TABLE OF CONTENTS

TABLES

1. SUMMARY OF FINDINGS

Remedial actions described in the Environmental Protection Agency's 1996 Record of Decision (ROD), issued in conjunction with the Oregon State Department of Environmental Quality, for the McCormick and Baxter Creosoting Company are being taken pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These actions also are considered agency actions under the Endangered Species Act (ESA) and are therefore required to substantively comply with the ESA. The U.S. Environmental Protection Agency (EPA) determined that this biological assessment is necessary to evaluate potential effects of the proposed remedial activities on federally listed threatened and endangered species.

This biological assessment (BA) addendum is the third BA addendum, which evaluates the potential effects on threatened and endangered species from the following activities that comprise the action:

- Demolition and off-site disposal of existing structures and infrastructure
- Construction of an impermeable soil cap within the barrier wall
- Construction of an earthen soil cap outside of the barrier wall
- Construction of a storm water management system
- Offloading of soil cap materials from barges
- Replacement of infrastructure, replacement of asphalt at the site entrance, construction of a new shop building, replacement of infrastructure to the new shop and existing offices
- Construction of a fence and access roads
- Project maintenance

The Federal listed species are:

- Lower Columbia River Chinook Salmon (*Oncorhynchus tshawytscha*)
- Upper Willamette River Chinook Salmon (*Oncorhynchus tshawytscha)*
- Lower Columbia River Steelhead *(Oncorhynchus mykiss)*
- Upper Willamette River Steelhead (*Oncorhynchus mykiss)*

- Columbia River Chum Salmon (*Oncorhynchus keta*)
- Bald Eagle (*Haliaeetus leucocephalus*)
- Golden Paintbrush (*Castilleja levisecta*)
- Water Howellia (*Howellia aquatilis*)
- Bradshaw's Lomatium (*Lomatium bradshawii*)
- Nelson's Checker-Mallow (*Sidalcea nelsoniana*)
- Willamette Daisy (*Erigeron decumbens var. decumbens*)
- Kincaid's Lupine (*Lupinus sulphureus var. kincaidii*)

The Federal proposed species are:

- Oregon Spotted Frog (*Rana pretiosa*).

EPA determined the following effects for each species because of this action.

Listed Species

- Lower Columbia River Chinook Salmon – May affect, not likely to adversely affect
- Upper Willamette River Chinook Salmon – May affect, not likely to adversely affect
- Lower Columbia River Steelhead – May affect, not likely to adversely affect
- Upper Willamette River Chinook Salmon – May affect, not likely to adversely affect
- Columbia River Chum Salmon – May affect, not likely to adversely affect
- Bald Eagle – No effect
- Golden Paintbrush – No effect
- Water Howellia – No effect
- Bradshaw's Lomatium – No effect
- Nelson's Checker-Mallow – No effect
- Willamette Daisy – No effect

- Kincaid’s Lupine – No effect

Federal Proposed Species

- Oregon Spotted Frog – Will not result in jeopardy

2. DESCRIPTION OF THE PROPOSED ACTION

The proposed action addressed in this BA addendum is the construction of an upland soil cap.

2.1 DEMOLITION AND OFF-SITE DISPOSAL OF EXISTING STRUCTURES AND INFRASTRUCTURE

DEQ completed the demolition and off-site disposal of above ground structures and debris, and underground structures in the early 1990s that would have interfered with the excavation of 33,000 tons of highly contaminated soil in 1999. The only remaining aboveground structures are a former shop building, a freight container located near the western property corner, four aboveground tanks used for water treatment operations (no longer in operation), a small metal shed containing a water service backflow prevention device, and several utility poles. All remaining structures and entrance area asphalt will be demolished and/or removed and disposed of in a State approved disposal facility. Existing utilities will be removed or abandoned. Fire hydrants will be removed and any associated piping will be grouted to prevent preferential flow paths and water lines will be capped. Existing facilities and infrastructure consists of:

- 5300 feet of water piping and 5 fire hydrants
- 990 feet of gas piping
- 3100 feet of overhead electrical lines and 14 utility poles
- 1 shop building and concrete foundation (2400 square feet)
- 3 holding tanks and containment berms
- Approximately 20 groundwater wells

Demolition and removal will occur beginning late February 2005 and be completed by early April 2005.

2.2 CONSTRUCTION OF AN IMPERMEABLE SOIL CAP WITHIN THE BARRIER WALL

The Barrier Wall was the subject of a biological assessment in 2004.[1] This action will be to cap the soils within the barrier wall with an impermeable cap. The purpose of the cap is to minimize filtration of rainwater into the contaminated areas within the wall. The impermeable cap will consist of several layers, listed below from bottom to top:

- Sand leveling layer that consists of approximately 4 inches of sand. This layer will require the placement of approximately 8,000 cubic yards of sand.
- HDPE geomembrane liner. This consists of approximately 71,780 square yards of liner.
- Geocomposite. This consists of 71,780 square yards of a geocomposite plastic 'fabric' that allows water to flow laterally.
- Sand drainage layer. This layer consists of approximately 47,000 cubic yards sand, placed at varying depths.
- 4"-minus screened biotic barrier layer of approximately 6 inches of crushed rock. This layer will require the placement of approximately 12,000 cubic yards of crushed rock.
- Geotextile filter fabric. This consists of 71,780 square yards filter fabric.
- Topsoil. This consists of 24, 000 cubic yards of topsoil placed approximately 9 to 12 inches in depth.
- Vegetation. The topsoil will be seeded with sterile winter wheat or other suitable grass species to minimize surface erosion.

The depth of the cap will vary because of varying subgrades and the final grade of the site. At a minimum, the impermeable cap will by 29 inches deep. The sand drainage layer will increase in depth to create the grades necessary to achieve site drainage. The maximum depth of the cap would be approximately 7 feet, which would include a 4-inch sand leveling layer, a 62-inch sand drainage layer, a 6-inch rock biotic barrier and 12 inches of topsoil. The impermeable cap will cover the entire 14.83-acre area inside of the barrier wall.

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[1] NOAA, NMFS October 2002

The materials for the impermeable cap and the earthen soil cap (described below) will be brought to the site by a combination of barge and truck. Approximately 40,000 cubic yards (CU) of topsoil is already stockpiled on-site.[2] An additional 55,000 CU will be brought in. To minimize truck traffic, the contractor will be limited to trucking in as much as 20,000 cubic yards (of the total 55,000 cubic yards). The rest will be brought in by barge. Trucks will use existing roads. As such, this document will not be assessing potential impacts from trucking. Barges will require the offloading of materials over water and this activity is discussed in Section 2.5.

Sand also will be brought in by a combination of barge and truck. To minimize truck traffic, the contractor will be limited to trucking in as much as 20,000 cubic yards (of the total 55,000 cubic yards). The rest will be brought in by barge. The contractor will have the discretion to bring in rock by barge or truck. All other materials will be brought in by truck.

The site will require preliminary surface grading. To develop the subgrade contours, approximately 20,000 cubic yards of existing soils will be excavated and reworked (cut and fill) to establish the design contours. No soils will be removed from the site for the construction of either cap. The impermeable cap will be seeded with native herbaceous vegetation and maintained to avoid invasion of woody species or noxious weeds. Sterile winter wheatgrass may be used to quickly establish the herbaceous cover in order to reduce surface water erosion over the first winter.

Construction for the impermeable cap and the earthen soil cap discussed in Section 2.3 would begin in May of 2005 and be completed by the end of October 2005. The planting of trees and shrubs will occur in February 2006.

2.3 Construction Of An Earthen Soil Cap Outside Of The Barrier Wall

Approximately 2-feet of topsoil will be placed over the remainder of the site, covering about 19 acres. The objective of this cap is to protect against direct contact with

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[2] See Additional Consultation on the Endangered Species Act – Section 7 Consultation Biological Opinion (Addendum) for the McCormick & Baxter Creosoting Company Superfund Site, Willamette Remediation Sediment Cap, Multnomah County, Oregon. Barging and Stockpiling Bank Cap Soil. April 20, 2004.

residual contamination. Low-level contamination in the soils is widespread throughout the site. The soil cap will consist of the following layers from bottom to top:

- Demarcation material (orange safety HDPE safety fencing). This consists of approximately 92,100 square yards of material.
- Topsoil. This will consist of approximately 61,400 cubic yards of material placed at 24-inches in depth over the 19-acre area.

Section 2.2 describes how all the capping materials will be brought to the site. The soil cap will be seeded with native herbaceous vegetation. The vegetation will be maintained to prevent noxious plant colonization.

2.4 Construction Of A Storm Water Management System

Subsurface Storm Water Management. The barrier wall area will be covered with an impermeable cap to minimize filtration of rainwater into the contaminated areas within the wall. Storm water (from rain) will be able to percolate through the upper soil layers of the cap to the underlying impermeable membrane. The water collected on the membrane will be removed via a subsurface drainage system to reduce ponding on the liner. This is necessary to maintain the structural integrity of the liner and minimize the possibility of water penetrating through the liner. The drainage system will consist of a system of perforated piping that will be buried at depths varying from 2- to 6-feet below the ground surface. The drainage system will be gravity fed and colleted to a single discharge point (8-inch diameter outflow pipe) outside of the barrier wall. The drainage system must be gravity directed, which results in discharging water at the lowest elevation point at the site. This will be at an elevation point outside of the barrier wall and onto the bank slopes of the Willamette River.

The outfall will discharge at elevation 17 feet NGVD; ordinary high water (OHW) at this location is at 16.6 feet). The bank at the discharge point will be further armored with 10-inch rock from the discharge point to approximately elevation 5-feet NGVD. As a result of the sediment cap construction, the bank is currently armored with Articulated Concrete Block (ACB). The rock will cover an area approximately 50-feet in length (down slope) and 12-feet wide (0.01-acre). Location of the outfall is indicated on Figure 1.

Outflow at the discharge point is expected to occur during and shortly after major or continuous rain events. Calculated outflow is approximately 2 cubic feet per second for a 25-year, 24-hour storm. This is an event of 3.9 inches of rain over a 24-hour period.

The drainage system would be constructed in conjunction with the impermeable cap.

Surface Drainage System. DEQ will also construct a surface storm water management system to contain storm water runoff on-site to the maximum extent practicable. The surface drainage system will consist of a system of drainage swales that will be directed to discharge to an on-site retention/infiltration pond. The swales will be approximately 2400 feet in length and will collect surface water from both cap areas. The swales will range from 50 to 100 feet in width and be 0.25 feet in depth. The surface grading of the caps will construct a sloped surface (approximately 1% slope) that will direct surface water runoff mostly away from the Willamette Shoreline, towards drainage swales that will surround the site. Some sheet flow drainage may discharge to the Willamette River, however, the riparian plantings will both trap and filter this limited amount of storm water[3]. The drainage swales will discharge to a retention/infiltration pond that will be approximately 0.8-acre in size and approximately 1.5 feet deep. The pond is of sufficient size and depth that it will not overtop during a 100-year, 24-hour storm (4.4-inch rain event). The pond bottom will be composed of a permeable material consistent with the existing subsurface sandy soil. The precipitation amount that would cause overtopping has not been calculated, but it would be an extreme event with rare occurrence. In the event of such an occurrence, the pond would overtop and discharge directly into the Willamette River.

2.5 Offloading of Soil Cap Materials From Barges

If all the cap materials (rock, sand, and topsoil) were barged to the site, it would result in a maximum of approximately 99,000 tons . This document will describe effects of the maximum amount, with the understanding that some lesser amount may actually reach the site by barge; DEQ will allow the contractor options to also include using trucks to bring in at least some of the cap materials. This total amount consists of approximately 64,000 tons of sand, 21,000 tons of rock and 14,000 tons of topsoil.

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[3] Refer to Appendix A of McCormick & Baxter Creosoting Company, Portland, Oregon. Sediment Cap Biological Assessment Addendum. October 2003.

The barges will be docked at an existing dock located to the immediate upstream of the McCormick and Baxter site. Although the dock is not in current use, it is in good repair and will not require any additional work to support the action.

Two sizes of barges will likely be used. One size carries approximately 9,000 tons with an offload rate of 1,000 tons per hour. The second size is a 2,500-ton barge with an offload rate of 200 tons per hour. The number of barges to offload the material would range between 11 and 40 barges, dependent upon the barge size. The barge size will be dependent upon what is available to DEQ's contractor at the time of construction.

Each barge will take anywhere from 9 to 13 hours to offload, depending upon the size and rate of offloading. Barges will be off-loaded one at time. The sand and topsoil will consist of clean materials from a State approved source.

The barged materials will be removed by a barge mounted conveyer system into a receiving hopper located on the existing dock. The conveyor will have elevated sides for spill control. This method will avoid the chance of incidental spills associated with the use of clamshell or bucket dredges. However, if it is necessary at some time during the offloading to use clamshell or bucket dredges, DEQ will require that a barge or inflatable float be placed under the swing path to collect any spills that may occur.

The offloaded sand and topsoil will be transported to the McCormick & Baxter site by trucks, which will use existing site roads from the loading area inland of the dock to the McCormick and Baxter south access gate. The trucks will be standard truck and trailer units capable of transporting 30 tons each. DEQ estimates that there will be approximately 3,300 truckloads to complete the action.

Barge offloading would occur between May and July of 2005, although some deliveries may continue through September if it is necessary to stage the delivery of some of the materials.

2.6 Replacement Of Infrastructure, Replacement Of Asphalt To Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices

The site entrance and support area will also be capped with 4 inches of new asphalt over 20 inches of crushed rock (to achieve the 2 foot cap thickness). A new 25-foot by 40-foot shop building will be constructed at the site entrance. New electrical lines, utility poles, and water services will be placed to the new shop building and the existing office trailers. Lines will be installed along the property line adjacent to the Union Pacific Railroad lines.

This work would begin in February of 2005 and be completed by April of 2005.

2.7 Construction Of A Fence And Access Roads

DEQ will construct a new 6-foot high chain-link fence along the top of the Willamette bank and landward of the riparian zone to prevent trespassing and vandalism on the site. The fence will be approximately 1900 linear feet and will tie into existing fences along the north and south sides to fully enclose the site.

DEQ will construct gravel and access roads around the perimeter of the site (except along the north side where DEQ will construct a drainage swale), with spurs that cross the interior area. The purpose of the roads is to allow monitoring and maintenance of the site and will not be open to public use. DEQ will also construct access roads on both sides of the new fencing (landward of the riparian zone) to allow project vehicle access both inside and outside of the fences.

A portion of the gravel road along the southeast corner of the site will also serve as a spillway for the retention/infiltration pond if an extreme storm event occurred (i.e., greater than a 100-year event). The access road will be constructed from the southeast corner of the pond (approximately 31.5 NGVD) to an approximate elevation of 5 feet NGVD and will be 15-feet wide. This would result in approximately 0.05-acre of gravel road below OHW.

Approximately 4,000 cubic yards of material will be used to construct all of the access roads. This material will be transported by truck to the site.

The construction of the fencing would be in September or October of 2005. The gravel roads will be constructed as necessary and/or feasible during the course of the project, finishing construction by the end of October 2005.

2.8 PROJECT MAINTENANCE

DEQ is currently developing a Monitoring and Maintenance Plan for the site, which includes, but is not limited to, maintenance items listed below:

Impermeable Cap System

DEQ will inspect the impermeable cap periodically for slope stability and erosion, burrowing animals, subsidence and/or ponding, and vegetation function (i.e., lack of vegetation, excessive vegetation, noxious species, etc).

- Annual fertilization to maintain the herbaceous vegetation cover.
- Annual or Semi-annual mowing (likely June and/or September)

Removal of noxious or undesirable species by physical removal. If noxious and/or undesirable species infestations are large, then judicious application of herbicides may be required. All vegetation maintenance activities will be consistent with the Vegetation Management Strategy described in the 2003 Biological Assessment for the Sediment Cap.

- Blockages, debris, and sediments will be removed as necessary from the subsurface drainage system.
- Blockages, debris, and sediments will be removed from the outfall as necessary.
- Repair outfall rock armoring as necessary.
- Sample outflow water quality after storm effects to assure contaminant isolation.

Storm Water Control Systems

- Regular inspection (at least twice yearly) of swales and surface slopes.

- Inspect for pooling, erosion, swale restrictions and stressed vegetation or other features that would degrade the function of the swales or the surface slopes.
- Any undesirable features will be repaired as necessary by re-grading, replanting, and/or repairing as needed.
- The swales may be mowed annually to facilitate surface drainage.
- Regular inspection (at least twice yearly) of the retention/infiltration pond.
- Check for blocked and restricted inflow, erosion, sedimentation, and undesirable vegetation.
- Any undesirable features will be repaired as necessary by re-grading, replanting, and/or repairing as needed.
- Dredge bottom sediments from the retention/infiltration pond when accumulation exceeds 3-inches over the design depth or when infiltration capacity becomes impaired.

3. DURATION AND TIMING OF THE ACTION

Construction will begin at the site in late February 2005 (upland demolition) and will be completed by October 2005.

4. DESCRIPTION OF ACTION AREA

The action area is the same as defined in the June 2002 Biological Assessment. Further details on the action area can be found in Section 4 of that document.[4]

[4] In June of 2002, the U.S. Fish and Wildlife Service made a determination that the Southwestern Washington/Lower Columbia River Sea-Run Cutthroat Trout did not warrant listing under the Endangered Species Act. The 2002 Biological Assessment included a discussion of this species that will not be continued in this document.

5. EVALUATING PROPOSED ACTIONS

Section 5 of the June 2002 BA contains a full discussion on the biological requirements of federally listed or proposed threatened or endangered species. This addendum incorporates by reference the information in the 2002 Biological Assessment.

6. BASELINE CONDITIONS IN THE WILLAMETTE RIVER

This section describes habitat pathways and indicators important for salmonids in the riverine ecosystem. Riverine habitat is emphasized because of the potential effects of the proposed action on this type of habitat. For non-salmonid threatened and endangered species in the action area, EPA used a more narrative approach. The complexities of salmonid life histories and migration warranted a more structured approach for the assessment of effects.

Section 6 of the June 2002 Biological Assessment contains a full discussion of the baseline conditions of the Willamette River. This addendum incorporates by reference the information in the 2002 BA.

Additional background information on the McCormick & Baxter Superfund Site can be found in the following documents:

- *Record of Decision*, McCormick and Baxter Creosoting Company Portland Plant, Portland, Oregon, March 1996, prepared by DEQ and EPA.

- *First Five-Year Review Report,* McCormick and Baxter Creosoting Company Superfund Site, Portland, Multnomah County, Oregon, September 2001, prepared by DEQ and EPA.

- *Explanation of Significant Difference* (OU3 – Final Groundwater), McCormick and Baxter Creosoting Company Superfund Site, Portland, Multnomah County, Oregon, August 2002, prepared by DEQ and EPA.

- *Soil Cap Design Criteria Report*, McCormick & Baxter Creosoting Company, Portland, Oregon, February 2004, prepared by Ecology & Environment, Inc. for DEQ.

7. EFFECTS OF THE ACTION

The following sections provide EPA's analysis of the direct and indirect effects of the proposed action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent to the action. These effects are considered along with the environmental baseline and the predicted cumulative effects to determine the overall effects to the species [50 CFR §402.02]. The separate activities making up the proposed action are listed in Section 1 and discussed in the following sections.

EPA determined the effects on the listed, proposed and candidate species by predicting changes in baseline condition for each of the indicators.

8. WATER QUALITY HABITAT INDICATORS

8.1 TEMPERATURE

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to water temperature because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. Construction storm water will be strictly managed to avoid any discharges to the Willamette River. There will be no changes to water temperature because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. Construction storm water will be strictly managed to avoid any discharges to the Willamette River. There will be no changes to water temperature because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). While the construction of the subsurface system will result in no discharge to the Willamette River, the completed drainage system will likely result in discharges during periodic storm events. The drainage system will be designed to evacuate excess water from the system rapidly. Any water within this system will likely be similar to groundwater and surface water temperatures. Any discharges to the river would not change water temperatures either locally or on a larger scale. There will be no change to water temperature because of this activity.

Construction Of A Storm Water Management System (Surface Drainage System). While the construction of the surface system will result in no discharge to the Willamette River, the completed drainage system may result in discharges during extreme storm events. The drainage system will be designed to retain water on site. This could result in increased water temperatures during the summer month, if water is still in the retention/infiltration pond during those months (an unlikely event). During storm events, any water within this system is likely to be the same as the ambient air and water temperatures at that time. As such, any discharges to the river during the extreme event would not change water temperatures either locally or on a larger scale. There will be no change to water temperature because of this activity.

Offloading of Soil Cap Materials From Barges. An existing dock will be used for offloading the barges. The barges will be moored at the dock until offloaded then they will be removed from the dock structure. The barges may provide additional shade for cooling water temperatures, but this effect would be minimal and extremely localized. There will likely be no changes to water temperature because of this activity.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on water temperature.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. This work will be done during the low water, so there will be minimal, if any, contact with Willamette River. Water temperature would not be impacted by the brief placement of road gravels should there by any contact with river water. This activity would have no effect on water temperature.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result in any activities that would come into contact the Willamette River or any discharges to the Willamette River. This activity would have no effect on water temperature

Project Maintenance (Storm Water Control). The majority of the maintenance activities for storm water control would not result in any in-water work or discharges to the Willamette River. The only possibility of a discharge would be if there were erosion problems at the outfall for the subsurface drainage system. More rock may need to be placed over the life of the project. This activity may require the in-water placement of additional rock or erosion control measures, dependent upon the conditions of the river. Water temperatures would not be impacted by the brief placement of rock should this work need to occur during high water periods. This activity would have no effect on water temperature.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline conditions for water temperature in the action area because of the lack of contact with the Willamette River with most of the activities. Any activity that may require in-water placement of gravel (road construction) or rock (future maintenance) would have minimal and highly localized impacts.

8.2 SEDIMENTATION/TURBIDITY

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to water sedimentation and/or turbidity because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. Construction storm water will be strictly managed to avoid any discharges to the Willamette River. There will be no changes to water sedimentation and/or turbidity because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. Construction storm water will be strictly managed to avoid any discharges to the Willamette River. There will be no changes to water sedimentation and/or turbidity because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). While the construction of the subsurface system will result in no discharge to the Willamette River, the completed drainage system will likely result in discharges during periodic storm events. The drainage system will be designed to evacuate excess water from the system rapidly and not likely to carry a perceptible sediment load (the cap consists of filter fabric, coarse sands and gravels beneath the topsoil cover). Any discharges to the river would not change water sedimentation and/or turbidity either locally or on a larger scale. There will be no change to water sedimentation and/or turbidity because of this activity.

Construction Of A Storm Water Management System (Surface Drainage System). While the construction of the surface system will result in no discharge to the Willamette River, the completed drainage system may result in discharges during extreme storm events. Any discharges to the river during the extreme event would likely result in a discharge of water with a relatively high sediment load. However, any event that would result in the overtopping of the retention/infiltration pond would also result in a high sediment load within the river itself. The discharge from the retention/infiltration pond would likely not result in any perceptible difference from background conditions in the river. Another possible source of water sedimentation and/or turbidity would be if the retention/infiltration pond had a structural failure or failed to function as designed. This could result in a short-term discharge of water with a higher turbidity than the Willamette. This impact would be expected to be minor in extent and short term in nature. Regular maintenance of the retention/infiltration pond will also reduce the likelihood of increasing water sedimentation and/or turbidity. Any effect on water sedimentation and/or /turbidity would be highly localized and temporary.

Offloading of Soil Cap Materials From Barges. There may be incidental spills of cap materials during the offloading process, which would result in a temporary localized increase in turbidity. If incidental discharges occur, EPA will place a barge or inflatable float on the water below the offloading areas to capture any fallback. Any incidental discharges that may occur will result in temporary increase in turbidity. This is expected minor in nature, limited in extent, and temporary.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on water sedimentation and/or turbidity.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. This work will be done during the low water, so there will be minimal, if any, contact with Willamette River. Water sedimentation and/or turbidity would not be impacted by the brief placement of road gravels should there by any contact with river water. This activity would have no effect on water sedimentation and/or turbidity.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result any activities that would involve work in the Willamette River or any discharges to the Willamette River. This activity would have no effect on water sedimentation and/or turbidity

Project Maintenance (Storm Water Control). The majority of the maintenance activities for storm water control would not result in any in-water work or discharges to the Willamette River. The only possibility of a discharge would be if there were erosion problems at the outfall for the subsurface drainage system. More rock may need to be placed over the life of the project. This activity may require the in-water placement of additional rock or erosion control measures, dependent upon the conditions of the river. If rock placement occurred in-water, it would result in highly localized increases in turbidity because of surface disturbance and the washing away of any fine materials associated with the larger rock. Any increased turbidity is expected to settle out quickly. Water sedimentation and/or turbidity impacts would be limited in extent and brief in nature.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline conditions for water sedimentation and/or turbidity in the action area because of either a lack of contact with the Willamette River for most of the activities or the limited duration and extent of activities that may increase sedimentation and/or turbidity.

8.3 Water Contamination

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to water contamination because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. Construction storm water will be strictly managed to avoid any discharges to the Willamette River. There will be no changes to water contamination because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. Construction storm water will be strictly managed to avoid any discharges to the Willamette River. There will be no changes to water contamination because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). While the construction of the subsurface system will result in no discharge to the Willamette River, the completed drainage system will likely result in discharges during periodic storm events. The drainage system is placed on top of the protective cap, so contact with contaminated sediments and/or materials is not expected to occur. However, the fact that there are contaminated materials below the protective cap may mean that some contact and contamination of storm water is theoretically possible, although highly unlikely. DEQ will be monitoring water quality at the outfall for evidence of contamination and will rectify any situation that results in storm water discharges that do not meet State Water Quality Standards. In the unlikely event that a discharge should occur, the quantity of water that can discharge from the outfall pipe is limited and the discharge would be of short duration. Any adverse impacts would be highly localized and limited in duration.

Construction Of A Storm Water Management System (Surface Drainage System). While the construction of the surface system will result in no discharge to the Willamette River, the completed drainage system may result in discharges during extreme storm events. The surface water management system drains areas of clean materials. Any event that would result in the overtopping of the retention/infiltration pond would not result in contaminated water discharging to the river. This activity would have no effect on water contamination.

Offloading of Soil Cap Materials From Barges. All materials offloaded from the barges will be clean and from State approved sources. This activity will have no effect on water contamination.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on water contamination.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. This work will be done with clean materials from a State approved source. This activity would have no effect on water contamination.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result any activities that would involve work the Willamette River or any discharges to the Willamette River. This activity would have no effect on water contamination.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control would not result in any contact with contaminated materials. Rock may need to be placed over the life of the project to prevent erosion at the outfall. Any materials used for erosion control would be clean and from a State approved source. This activity would have no effect on water contamination.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline conditions for water contamination in the action area because of either a lack of contact with the Willamette River for most of the activities or the unlikely occurrence of the subsurface storm water mixing with contaminated materials. Any possible adverse impacts would be temporary and limited in extent.

8.4 SEDIMENT CONTAMINATION

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to sediment contamination because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. There will be no changes to sediment contamination because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water work. Construction storm water will be strictly managed to avoid any discharges to the Willamette River. There will be no changes to sediment contamination because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). While the construction of the subsurface system will result in no discharge to the Willamette River, the completed drainage system will likely result in discharges during periodic storm events. The drainage system is placed within the protective cap, so contact with contaminated sediments and/or materials is not expected to occur. However, the fact that there are contaminated materials below the protective cap may mean that some contact and contamination of storm water is possible, although highly unlikely. DEQ will be monitoring water quality at the outfall for evidence of contamination and will rectify any situation that results in storm water discharges that do not meet State Water Quality Standards. In the unlikely event that a discharge should occur, sediment below the outfall pipe may have an increase in contaminants. However, the limited possibility of a contaminant discharge discussed under water contamination above equally limits the possibility of sediment contamination from this source.

Construction Of A Storm Water Management System (Surface Drainage System). While the construction of the surface system will result in no discharge to the Willamette River, the completed drainage system may result in discharges during extreme storm events. The surface water management system drains areas of clean materials. Any event that would result in the overtopping of the retention/infiltration pond would not result in contaminated sediments discharging to the river. This activity would have no effect on sediment contamination.

Offloading of Soil Cap Materials From Barges. All materials offloaded from the barges will be clean and from State approved sources. This activity will have no effect on sediment contamination.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on sediment contamination.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. This work will be done with clean materials from a State approved source. This activity would have no effect on sediment contamination.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result any work in the Willamette River or any discharges to the Willamette River. This activity would have no effect on sediment contamination.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control would not result in any contact with contaminated materials. Rock may need to be placed over the life of the project to prevent erosion at the outfall. Any materials used for erosion control would be clean and from a State approved source. This activity would have no effect on sediment contamination

Effect on Baseline. EPA has determined that the action will have no effect on the baseline conditions for sediment contamination in the action area because of either a lack of contact with the Willamette River for most of the activities or the unlikely occurrence of the subsurface storm water mixing contaminated materials. Any possible adverse impacts would be temporary and limited in extent.

9. HABITAT ACCESS INDICATORS

9.1 PHYSICAL BARRIERS

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to physical barriers because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. There will be no changes to physical barriers because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. There will be no changes to physical barriers because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). The construction of the subsurface storm water management system will be in upland areas, which the exception of the outfall and 10-inch rock placed on existing armoring below the outfall. The upland portions will have no effect on physical barriers. The placement of rock will result in a minor change to the beach profile, which may act as a minor barrier to fish migration during high water. The rock feature would not extend below 5-feet NGVD, which still allows ample shallow water habitat for juvenile fish to migrate around, should this act as a barrier at any time. This feature is very minor and similar to conditions along the existing variable shoreline.

Construction Of A Storm Water Management System (Surface Drainage System). The construction of the surface water management system will not result in any construction in the Willamette River. This activity would have no effect on physical barriers.

Offloading of Soil Cap Materials From Barges. The barges and the offloading activities would not result in creating any additional physical barriers on the Willamette shoreline. This activity will have no effect on physical barriers.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on physical barriers.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. The road would not extend below 5-feet NGVD, which still allows ample shallow water habitat for juvenile fish to migrate around, should this act as a barrier at any time. This feature is very minor and similar to conditions in the existing variable shoreline.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result in any work in the Willamette River or any discharges to the Willamette River. This activity would have no effect on physical barriers.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control would not result in any changes to physical barriers, with the exception of the placement of rock that may need to be placed over the life of the project to prevent erosion at the outfall. This effect would be similar to that described above for the construction of the erosion control feature below the outfall.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline conditions for physical barrier in the action area because of either a lack of contact with the Willamette River for most of the activities or the minor changes to the shoreline because of erosion control at the outfall and construction of the gravel roads. Any possible adverse impacts may occur during high water times of the year when juvenile fish may be forced to migrate around obstruction. These impacts are expected to be minor because the juveniles will have abundant shallow water habitat in which to navigate around any possible obstructions. There will be no changes to physical barriers because of this activity.

10. Habitat Elements Indicators

10.1 Large Woody Debris

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to large woody debris because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. There will be no changes to large woody debris because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. There will be no changes to large woody debris because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). The construction of the subsurface storm water management system will be in upland areas, with the exception of the outfall and 10-inch rock placed on existing armoring below the outfall. There is no existing riparian area at the construction site, although the top of the bank will be planted with riparian vegetation (see October 2003 Biological Assessment for the Sediment Cap). The upland portions will have no effect on large woody debris recruitment or placement. The placement of rock will result in a minor change to the beach profile, but will not interfere with large woody debris recruitment or placement in the shallow water environment. Woody debris may be removed if it interferes with the outfall pipe, but it would be moved to another location on the project shoreline. There will be no changes to large woody debris because of this activity.

Construction Of A Storm Water Management System (Surface Drainage System). The construction of the surface storm water management system will not result in construction in the Willamette River. This activity would have no effect on large woody debris.

Offloading of Soil Cap Materials From Barges. The barges and the offloading activities would have no effect on large woody debris.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on large woody debris.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. This activity will have no effect on large woody debris recruitment or placement.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result in any work in the Willamette River or any discharges to the Willamette River. This activity would have no effect on large woody debris.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control would not result in any changes to large woody debris, with the possible exception of moving any large woody debris that affects the outfall. As stated above, any large woody debris that needs moving to protect the outfall structures would just be moved to another location along the project shoreline.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline conditions for large woody debris in the action area because of either a lack of contact with the Willamette River for most of the activities or the minor changes to the shoreline because of erosion control at the outfall and construction of the gravel roads. There will be no changes to large woody debris because of this activity.

10.2 SHALLOW WATER HABITAT

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to shallow water habitat because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. There will be no changes to shallow water habitat because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. There will be no changes to shallow water habitat because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). The construction of the subsurface storm water management system will be in upland areas, with the exception of the outfall and 10-inch rock placed on existing armoring below the outfall. The upland portions will have no effect on shallow water habitat. The placement of rock will result in a minor change to the beach profile, but will not result in a loss or degradation of existing shallow water habitat.

Construction Of A Storm Water Management System (Surface Drainage System). The construction of the surface storm water management system will not result in construction in the Willamette River. This activity would have no effect on shallow water habitat.

Offloading of Soil Cap Materials From Barges. The barges and the offloading activities would have no effect on shallow water habitat.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on shallow water habitat.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. This activity will result in a minor change to the shallow water environment during high water, but will not result in the loss or degradation of shallow water habitat.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result in any work in the Willamette River or any discharges to the Willamette River. This activity would have no effect on shallow water habitat.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control would not result in any changes to shallow water habitat.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline conditions for shallow water habitat in the action area because of either a lack of contact with the Willamette River for most of the activities or the minor changes to the shoreline because of erosion control at the outfall and construction of the gravel roads. There will be no changes to shallow water habitat because of this activity.

11. CHANNEL CONDITIONS AND DYNAMICS INDICATORS

11.1 STREAMBANK CONDITION

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no changes to streambank condition because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. There will be no changes to streambank condition because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. There will be no changes to streambank condition because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). The construction of the subsurface storm water management system will be in upland areas, which the exception of the outfall and 10-inch rock placed on existing armoring below the outfall. The upland portions will have no effect on streambank condition. The placement of rock will result in a minor change to the beach profile, but will not result in the degradation of existing streambank condition.

Construction Of A Storm Water Management System (Surface Drainage System). The construction of the surface storm water management system will not result in construction in the Willamette River. This activity would have no effect on streambank condition.

Offloading of Soil Cap Materials From Barges. The barges and the offloading activities would have no effect on streambank condition.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New

Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on streambank conditions.

Construction Of A Fence And Access Roads. The fence and the majority of the access roads will be above the OHW and will involve no in-water work. A small portion of a gravel access road will be built below OHW. This activity will result in a minor change to the existing streambank, but will not result in the degradation of streambank condition.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap would not result any work in the Willamette River or any discharges to the Willamette River. This activity would have no effect on streambank condition.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control would not result in any changes to streambank condition.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline for streambank condition in the action area because of either a lack of contact with the Willamette River for most of the activities or the minor changes to the streambank because of erosion control at the outfall and construction of the gravel roads. There will be no changes to streambank condition because of this activity.

11.2 FLOODPLAIN CONNECTIVITY

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in contact with surface water. There will be no changes to floodplain connectivity because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. There will be no changes to floodplain connectivity because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. There will be no changes to floodplain connectivity because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). The construction of the subsurface storm water management system will not result in any changes to existing floodplain connectivity.

Construction Of A Storm Water Management System (Surface Drainage System). The construction of the surface storm water management system will have no effect on floodplain connectivity.

Offloading of Soil Cap Materials From Barges. The barges and the offloading activities would have no effect on floodplain connectivity.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on floodplain connectivity.

Construction Of A Fence And Access Roads. The fence and the access roads will have no effect on floodplain connectivity.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap will have no effect on floodplain connectivity.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control will have no effect on floodplain connectivity.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline for floodplain connectivity in the action area.

12. WATERSHED CONDITIONS

12.1 DISTURBANCE HISTORY

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline and will not be in any contact with surface water. There will be no effect on disturbance history because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas, which will involve no in-water construction. There will be no effect on disturbance history because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, which involve no in-water construction. There will be no effect on disturbance history because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). The construction of the subsurface storm water management system will have no effect on disturbance history.

Construction Of A Storm Water Management System (Surface Drainage System). The construction of the surface storm water management system will have no effect on disturbance history.

Offloading of Soil Cap Materials From Barges. The barges and the offloading activities would have no effect on disturbance history.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on disturbance history.

Construction Of A Fence And Access Roads. The fence and the access roads will have no effect on disturbance history.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap will have no effect on disturbance history.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control will have no effect on disturbance history.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline for disturbance history in the action area.

12.2 RIPARIAN RESERVES

Demolition And Off-Site Disposal Of Existing Structures And Infrastructure. The existing structures are well over 300 feet from the existing shoreline with no existing riparian areas. There will be no effect on riparian reserves because of this activity.

Construction Of An Impermeable Soil Cap Within The Barrier Wall. The construction of the impermeable soil cap will occur on existing upland areas with no riparian areas. There will be no effect on riparian reserves because of this activity.

Construction Of A Soil Cap Outside Of The Barrier Wall. The construction of the soil cap will occur on existing upland areas, with no riparian areas. There will be no effect on riparian reserves because of this activity.

Construction Of A Storm Water Management System (Subsurface Storm Water Management). The construction of the subsurface storm water management system will have no effect on riparian reserves.

Construction Of A Storm Water Management System (Surface Drainage System). The construction of the surface storm water management system will have no effect on riparian reserves.

Offloading of Soil Cap Materials From Barges. The barges and the offloading activities would have no effect on riparian reserves.

Replacement Of Infrastructure, Replacement Of Asphalt At The Site Entrance, Construction of A New Shop Building, Replacement of Infrastructure To The New Shop And Existing Offices. These activities will be located over 300 feet away from the Willamette River shoreline and will have no effect on riparian reserves.

Construction Of A Fence And Access Roads. The fence and the access roads will have no effect on riparian reserves.

Project Maintenance (Impermeable Cap). Maintenance of the impermeable cap will have no effect on riparian reserves.

Project Maintenance (Storm Water Control). The maintenance activities for storm water control will have no effect on riparian reserves.

Effect on Baseline. EPA has determined that the action will have no effect on the baseline for riparian reserves in the action area.

Table 1 provides a summary of all the indicators and expected changes in conditions because of the proposed project.

Table 1. Expected Changes to Baseline Conditions

INDICATOR	EFFECTS			
	Restore	Maintain	Degrade Short Term	Degrade Long Term
WATER QUALITY				
Temperature		X		
Sediment/Turbidity		X		
Water Contamination		X		
Sediment Contamination		X		
HABITAT ACCESS				
Physical Barriers		X		
HABITAT ELEMENTS				
LWD		X		
Shallow Water		X		
CHANNEL CONDITIONS AND DYNAMICS				
Floodplain connectivity		X		
Floodplain Connectivity		X		
WATERSHED CONDITIONS				
Disturbance History		X		
Riparian Reserves		X		

13. BENEFICIAL EFFECTS

EPA, through its responsibilities under CERCLA, has concluded that sediments, soils, and groundwater at McCormick and Baxter are contaminated with hazardous substances. EPA also concluded that if the remedial actions specified in the ROD are not undertaken, the actual or threatened releases of hazardous substances might present an imminent and substantial endangerment to human health and/or the environment. As such, EPA is required to pursue actions that will control the release of hazardous substances.

The construction of the soil cap will have significant beneficial effects. It is one of many actions at this site to reduce the sources of exposure of fish and wildlife to hazardous substances, reduce risk to human health through exposure, and assist in the improvement of sediment, and water quality on the Willamette River by isolating contaminated materials. The action will support reversing the trends of continued degradation of the riverine environment.

14. INTERRELATED AND INTERDEPENDENT EFFECTS

Interdependent actions are those that have no independent utility apart from the action being considered. Interrelated actions are activities that are part of the larger action and depend on the larger action for their justification. The proposed soil cap, as part of the remedy for contaminated Willamette River sediment, soils and groundwater, includes a barrier wall (see June 2002 BA) and sediment cap (see October 2003 BA Addendum).

15. CUMULATIVE EFFECTS

Cumulative effects are defined in 50 CFR part 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area for this project encompasses a significant portion of the Willamette River. This area is currently a disturbed riverine ecosystem altered by previous dredging, backfilling, sewage and industrial discharges, and other anthropogenic activities over the past 100 years. Future Federal actions, including additional clean-up activities, navigational dredging, and activities permitted under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act, would be reviewed under separate Section 7 consultation processes and are not considered cumulative effects.

The clean-up activities have the potential to increase public interest in the site for educational purposes, recreational activities, or other shoreline amenities. Activities requiring Federal permits or Federal funding will be subject to Section 7 review.

16. Conclusion

The action area has degraded baseline conditions. The proposed action would result in no change to existing conditions and is in support of the overall efforts by EPA to contain a source of groundwater, soil, and sediment contamination thereby resulting in improved baseline conditions for certain aspects of habitat supporting threatened or endangered species.

16.1 Chinook Salmon (Lower Columbia River ESU, Upper Willamette River ESU)

The soil cap is in support of the remedy for soils and groundwater at the McCormick and Baxter site. Thus, in the long-term, the remedial action would address unacceptable risks to the environment and public health. The project's long-term effects will help improve and restore salmon habitat in the Willamette River. This action may result in minor impacts to water temperature and water sedimentation/turbidity from the placement of rock and gravel below OHW; the potential (albeit unlikely) for minor amounts of contaminants discharging from the outfall pipe; and the potential for rock and gravel acting as a physical barrier for juvenile salmon during high water. All of the potential impacts are minor in nature and very limited in extent. It is EPA's determination that the project **may affect, but will not adversely affect Chinook salmon.**

16.2 Steelhead (Lower Columbia River ESU, Upper Willamette River ESU)

The soil cap is in support of the remedy for soils and groundwater at the McCormick and Baxter site. Thus, in the long-term, the remedial action would address unacceptable risks to the environment and public health. The project's long-term effects will help improve and restore salmon habitat in the Willamette River. This action may result in minor impacts to water temperature and water sedimentation/turbidity from the placement of rock and gravel below OHW; the potential (albeit unlikely) for minor amounts of contaminants discharging from the outfall pipe; and the potential for rock and gravel acting as a physical barrier for juvenile salmon during high water. All of the potential impacts are minor in nature and very limited in extent. It is EPA's determination that the project **may affect, but will not adversely affect steelhead.**

16.3 COLUMBIA CHUM SALMON

The soil cap is in support of the remedy for soils and groundwater at the McCormick and Baxter site. Thus, in the long-term, the remedial action would address unacceptable risks to the environment and public health. The project's long-term effects will help improve and restore salmon habitat in the Willamette River. This action may result in minor impacts to water temperature and water sedimentation/turbidity from the placement of rock and gravel below OHW; the potential (albeit unlikely) for minor amounts of contaminants discharging from the outfall pipe; and the potential for rock and gravel acting as a physical barrier for juvenile salmon during high water. All of the potential impacts are minor in nature and very limited in extent. It is EPA's determination that the project **may affect, but will not adversely affect chum salmon.**

17. PROPOSED CRITICAL HABITAT

NOAA Fisheries filed proposed rules in the *Federal Register* on 20 November 2004 to designate critical habitat areas for a number of populations of salmon and steelhead. The salmon and steelhead populations are listed in the following: (1) Puget Sound Chinook salmon; (2) Lower Columbia River Chinook salmon; (3) Upper Willamette River Chinook salmon; (4) Upper Columbia River spring-run chinook salmon; (5) Oregon Coast coho salmon; (6) Hood Canal summer-run chum salmon; (7) Columbia River chum salmon; (8) Ozette Lake sockeye salmon; (9) Upper Columbia River steelhead; (10) Snake River Basin steelhead; (11) Middle Columbia River steelhead; (12) Lower Columbia River steelhead; and (13) Upper Willamette River steelhead.

The proposed designations look at certain factors called "primary constituent elements" (PCEs) that are essential to support one or more of the life stages of salmon. The PCEs consist of the following habitats:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development;
2. Freshwater rearing sites with:
   - water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility;
   - water quality and forage supporting juvenile development;
   - natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks;
3. Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival;
4. Estuarine areas free of obstruction and excessive predation with:
   - water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater;

- natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels**;**

- juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

5. Nearshore marine areas free of obstruction and excessive predation with:

   - water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation;

   - natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.

6. Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

The areas of critical habitat proposed in 50 CFR Part 226 for the project area includes the following:

1. Lower Columbia River Chinook Salmon ESU

   - Critical Habitat Lower Willamette Subbasin (Unit 10)

   - Rearing/Migration Corridor (Unit 11)

2. Upper Willamette River Chinook Salmon ESU

   - Rearing/Migration Corridor (Unit 11)

3. Lower Columbia River Steelhead ESU

   - Critical Habitat Lower Willamette Subbasin (Unit 9)

4. Upper Willamette River Steelhead ESU

   - Rearing/Migration Corridor (Unit 8)

The analysis and findings of impacts to proposed critical habitat are contained in Appendix B of this document.

18. CONSERVATION MEASURES

The following conservation measures will reduce or eliminate potential impacts to the listed anadromous fish species:

1. Construction impacts will be confined to the minimum area necessary to complete the project.

2. All work below OHW on the Willamette River will be completed in the dry (low water).

3. A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment will be developed.

4. During construction in upland areas, monitoring of shoreline turbidity and inspection of all erosion controls will be performed daily, or more often as necessary, to ensure that erosion controls are working adequately.

5. Erosion control devices will be inspected daily during the rainy season and weekly during the dry season until the site is permanently stabilized.

6. If monitoring and inspection shows that the erosion controls are ineffective, work crews will be mobilized immediately, during working and off-hours, to make repairs, install replacements, or install additional controls as necessary.

7. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 5 inches (12 cm). Catch basins will be maintained so that no more than 6 inches (15 cm) of sediment depth accumulates within traps or sumps.

8. A supply of erosion control materials (*e.g.*, silt fence and straw bales) will be on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.

9. Oil absorbing, floating booms will be available on-site during all phases of construction whenever surface water is present.

10. Effective erosion control measures will be in-place at all times during the construction, and will remain and be maintained until such time that permanent erosion control measures are effective.

11. Vehicle staging, maintenance, refueling, and fuel storage areas will be placed a minimum of 150 feet horizontal distance from the Willamette River. Exceptions may be made for cranes and other very slow-moving equipment; these vehicles may be refueled in place but shall have containment measures in place that meet or exceeds 100% containment.

12. All vehicles operated within 150 feet of the Willamette River will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.

13. When not in use, vehicles will be stored in the vehicle staging area with the exception of cranes and other very slow-moving vehicles.

14. Offloading actions will be controlled to avoid spills of sand and topsoil materials into the Willamette River. Controls will include the use of a contained conveyer system or, if necessary, the placement of a barge or float to trap any incidental materials lost while offloading.

15. Any temporary stockpiles will have storm water controls consistent with storm water management as noted in the 2003 Addendum.

19. EFFECTS OF THE PROPOSED ACTION ON OTHER LISTED SPECIES

19.1 BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*)

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. Although bald eagles are within the action area, no bald eagle nests are within 1 mile of the project site. Survival and reproductive success of eagles would be unaffected.

Cumulative, Interrelated or Interdependent Effects. There would be no significant cumulative, interrelated or interdependent effects on this species from the proposed project in conjunction with other projects or actions.

Conservation Methods. None.

Effect Determination. The proposed action will have **no effect** on the bald eagle.

19.2 GOLDEN PAINTBRUSH (*CASTILLEJA LEVISECTA*)

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. The actions proposed for the project site would not directly or indirectly affect areas known to support or potentially support individuals or populations of *C. levisecta.*

Cumulative, Interrelated or Interdependent Effects. There would be no cumulative, interrelated or interdependent effects because of this action.

Conservation Methods. None

Effect Determination. The action would have **no effect** on *C. levisecta*

19.3 WATER HOWELLIA (*HOWELLIA AQUATILIS*)

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. The actions proposed for the project site would not directly or indirectly affect areas known to support or potentially support individuals or populations of *H. aquatilis.*

Cumulative, Interrelated or Interdependent Effects. There would be no cumulative, interrelated or interdependent effects because of this action.

Conservation Methods. None

Effect Determination. The action would have **no effect** on *Howellia aquatilis.*

19.4 BRADSHAW'S LOMATIUM (*LOMATIUM BRADSHAWII*)

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. The actions proposed for the project site would not directly or indirectly affect areas known to support or potentially support individuals or populations of *L. bradshawii.*

Cumulative, Interrelated or Interdependent Effects. There would be no cumulative, interrelated or interdependent effects because of this action.

Conservation Methods. None

Effect Determination. The action would have **no effect** on *Lomatium bradshawii.*

19.5 NELSON'S CHECKER MALLOW (*SIDALCEA NELSONIANA)*

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. The actions proposed for the project site would not directly or indirectly affect areas known to support or potentially support individuals or populations of *S. nelsoniana.*

Cumulative, Interrelated or Interdependent Effects. There would be no cumulative, interrelated or interdependent effects because of this action.

Conservation Methods. None

Effect Determination. The action would have **no effect** on *Sidalcia nelsoniana.*

19.6 Willamette Daisy (*Erigeron decumbens var. decumbens*)

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. The actions proposed for the project site would not directly or indirectly affect areas known to support or potentially support individuals or populations of *E. decumbens.*

Cumulative, Interrelated or Interdependent Effects. There would be no cumulative, interrelated or interdependent effects because of this action.

Conservation Methods. None

Effect Determination. The action would have **no effect** on *Erigeron decumbens var. decumbens.*

19.7 Kincaid's Lupine (*Lupinus sulphureus var. kincaidii*)

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. The actions proposed for the project site would not directly or indirectly affect areas known to support or potentially support individuals or populations of *L. sulphureus.*

Cumulative, Interrelated or Interdependent Effects. There would be no cumulative, interrelated or interdependent effects because of this action.

Conservation Methods. None

Effect Determination. The action would have **no effect** on *Lupinus sulphureus var. kincaidii.*

19.8 OREGON SPOTTED FROG (*RANA PRETIOSA*)

Species and site use information can be found in the June 2002 Biological Assessment.

Analysis of Effects. The actions proposed for the project site would not directly or indirectly affect areas known to support or potentially support individuals or populations of Oregon spotted frog.

Cumulative, Interrelated or Interdependent Effects. There would be no cumulative, interrelated or interdependent effects because of this action.

Conservation Methods. None

Effect Determination. The action would **not result in jeopardy** for Oregon spotted frog.

20. REFERENCES

National Oceanic and Atmospheric Administration, National Marine Fisheries Service. October 2002. Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for the Construction of a Barrier Wall at the McCormick and Baxter Creosoting Company Site, Portland, Oregon.

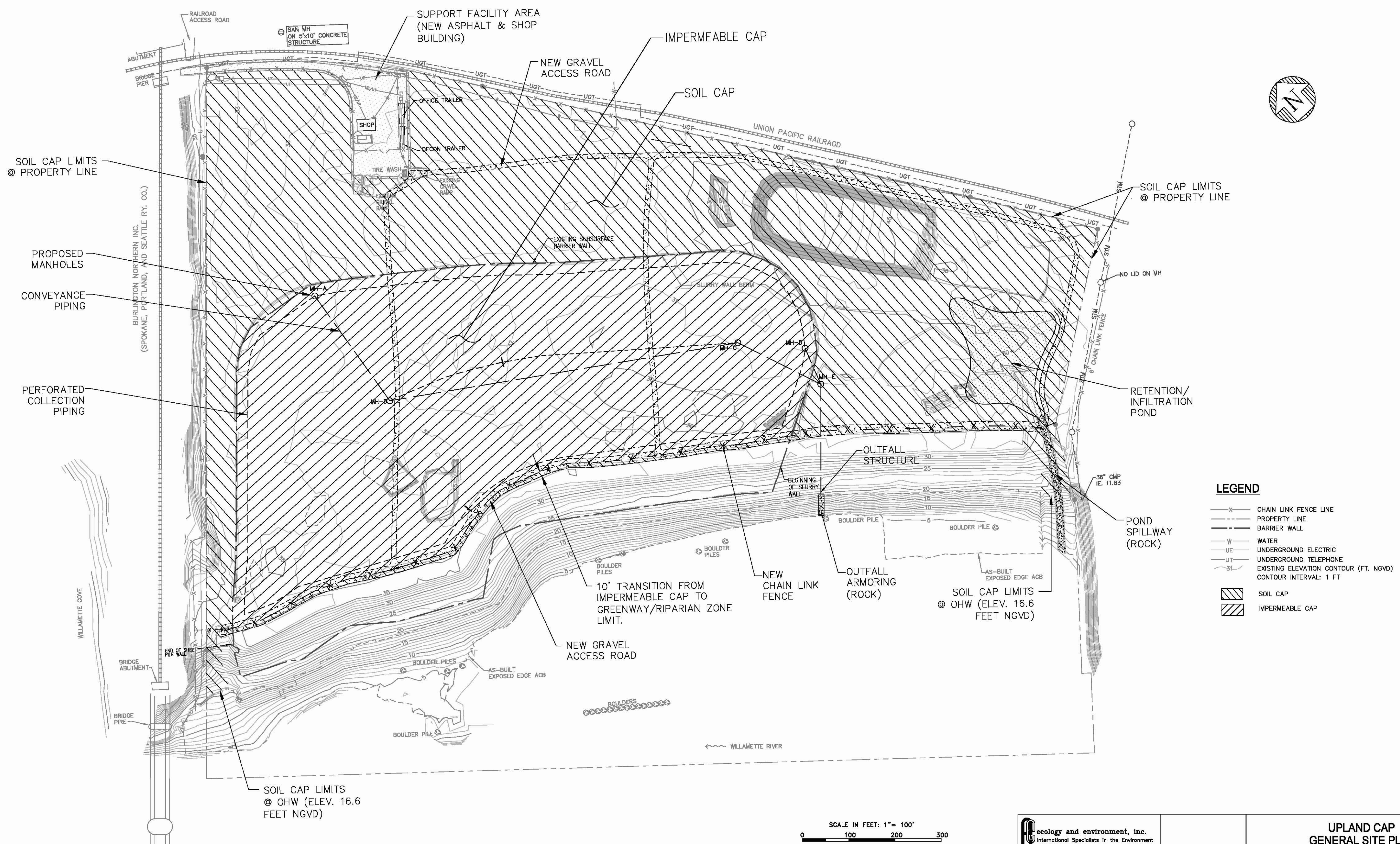
National Oceanic and Atmospheric Administration, National Marine Fisheries Service. March 2004. Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the McCormick and Baxter Creosoting Company Site, Willamette River Remediation Sediment Cap, Multnomah County, Oregon.

U.S. Environmental Protection Agency and Oregon State Department of Environmental Quality. June 2002. Biological Assessment Barrier Wall, McCormick And Baxter Creosoting Company. Portland, Oregon.

U.S. Environmental Protection Agency and Oregon State Department of Environmental Quality. October 2003. Biological Assessment Addendum Sediment Cap, McCormick And Baxter Creosoting Company. Portland, Oregon.

U.S. Environmental Protection Agency and Oregon State Department of Environmental Quality. May 2004. Biological Assessment Addendum Upland Soil Cap Remedy – Soil Stockpiling, McCormick And Baxter Creosoting Company. Portland, Oregon.

FIGURES



ecology and environment, inc.
International Specialists in the Environment
Portland, Oregon

NO.	DATE	DWN	APP'D	DESCRIPTION

REVISIONS

DESIGNED BY: C. NANCARROW
CHECKED BY:
DRAWN BY: S. STEVENS
APPROVED BY A. WHITMAN

UPLAND CAP GENERAL SITE PLAN

McCORMICK & BAXTER CREOSOTING CO.
PORTLAND, OREGON

SCALE	DATE ISSUED	C.A.D. FILE NO.	DRAWING NO.
NOTED	1-14-05		

APPENDIX A ESSENTIAL FISH HABITAT

The project area has been designated as Essential Fish Habitat (EFH) for various life stages of Chinook and coho salmon, and starry flounder (*Platyichthys stellatus*). The Pacific Fisheries Management Council (PFMC) has designated EFH for federally managed fisheries within the waters of Washington, Oregon, and California. The designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line, and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon, and California, seaward to the boundary of the U.S. exclusive economic zone (PFMC 1998a, and 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years) (PFMC 1999).

Detailed descriptions and identifications of EFH for the groundfish species are found in the Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to the Pacific Groundfish Management Plan (PFMC 1998a) and the NOAA Fisheries Essential Fish Habitat for West Coast Groundfish Appendix (Casillas et al 1998). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

EFH Considerations

The *Adverse Nonfishing Impacts and Recommended Conservation Measures* potions of the groundfish and coastal pelagic EFH appendices identify several impacts of filling projects on EFH. Those impacts include: (1) adverse effects on infaunal and bottomdwelling organisms; (2) changes to benthic habitats resulting from erosion, slumping, or lateral displacement of surrounding bottom deposits; (3) elevated turbidity which may impact aquatic vegetation or directly affect fish species; (4) changes to the chemistry and physical characteristics of the receiving water; and (5) loss of habitat function due to burial.

Essential Fish Habitat (EFH) for the Pacific coast salmon fishery is those waters and substrate necessary for salmon production needed to support a long-term sustainable fishery and salmon contributions to a healthy ecosystem. Important features of freshwater EFH for salmon are: (1) substrate composition; (2) water quality; (3) water quantity, depth, and velocity; (4) channel gradient and stability; (5) food; (6) cover and habitat complexity; (7) space; (8) access and passage; and (9) flood plain and habitat connectivity (PFMC 1999).

Effects of Proposed Action

EPA determined that the project would not result in degrading EFH. As such, EPA has determined that the proposed action will not adversely affect the EFH for starry flounder and Pacific salmon species (Chinook and coho salmon).

References:

Casillas, E., L. Crockett, Y. deReynier, J. Glock, M. Helvey, B. Meyer, C. Schmidt, M. Yoklavich, A. Baily, B. Chao, B. Johnson and T. Pepperell. 1998. Essential Fish Habitat West Coast Groundfish Appendix. National Marine Fisheries Service. Seattle, WA.

Pacific Fishery Management Council (PFMC). 1998a. Final Environmental Assessment/Regulatory Review for Amendment 11 to the Pacific Coast Groundfishery Management Plan. October 1998.

Pacific Fishery Management Council. 1998b. *Essential Fish Habitat: West Coast Groundfish Appendix*. <http://www.nwr.noaa.gov/1sustfsh/efhappendix/page1.html>.

Pacific Fishery Management Council (PFMC). 1999. Identification and Description of Essential Fish Habitat, Adverse Impacts, and Recommended Conservation Measures for Salmon (Appendix A of Amendment 14 to the Pacific Coast Salmon Plan). <http://www.pcouncil.org/Salmon/a14efh/efhindex.html>.

APPENDIX B ADDENDUM FOR INFORMAL ESA CONSULTATION ON PROPOSED CRITICAL HABITAT

ADDENDUM FOR INFORMAL ESA CONSULTATION

ASSESSMENT OF IMPACTS TO CRITICAL HABITAT FOR

Lower Columbia River Chinook Salmon

Salmon Critical Habitat - Primary Constituent Elements

From 50 CFR Part 226

The primary constituent elements determined essential to the conservation of Lower Columbia River Chinook Salmon (*Oncorhynchus tshawytscha*) are as follows:

(1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.

Existing Conditions: No spawning occurs, or is likely to occur, at the project site.

(2) Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide some limited rearing functions. The City of Portland noted that juvenile fish were holding in a protected embayment directly downstream of the project site, in the adjacent Willamette Cove. Conditions are similar enough in the near shore adjacent to the project site to assume some holding may occur here.

(3) Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide resting areas for out-migrating juveniles. See (2) above.

(4) Estuarine areas free of obstruction with water quality, water quantity and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels, and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: Not project is not located in or near estuarine areas.

(5) Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulder and side channels.

Existing Conditions: The project is not located in or near nearshore marine areas.

(6) Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: The project is not located in or near offshore marine areas.

Effects Analysis: The project will result in only slight modifications to the fresh water environment.

Determination of Effect: The project will not result in the destruction or adverse modification of critical habitat for this ESU.

Conservation Measures: Conservation measures are listed in Section 18 and are pertinent to any modification of critical habitat for this ESU.

ADDENDUM FOR INFORMAL ESA CONSULTATION

ASSESSMENT OF IMPACTS TO CRITICAL HABITAT FOR

Upper Willamette River Chinook Salmon

Salmon Critical Habitat - Primary Constituent Elements

From 50 CFR Part 226

The primary constituent elements determined essential to the conservation of Upper Willamette River Chinook Salmon are as follows:

(1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.

Existing Conditions: No spawning occurs, or is likely to occur, at the project site.

(2) Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide some limited rearing functions. The City of Portland noted that juvenile fish were holding in a protected embayment directly downstream of the project site, in the adjacent Willamette Cove. Conditions are similar enough in the near shore adjacent to the project site to assume some holding may occur here.

(3) Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide resting areas for out-migrating juveniles. See (2) above.

(4) Estuarine areas free of obstruction with water quality, water quantity and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels, and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: Not project is not located in or near estuarine areas.

(5) Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulder and side channels.

Existing Conditions: The project is not located in or near nearshore marine areas.

(6) Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: The project is not located in or near offshore marine areas.

Effects Analysis: The project will result in only slight modifications to the fresh water environment.

Determination of Effect: The project will not result in the destruction or adverse modification of critical habitat for this ESU.

Conservation Measures: Conservation measures are listed in Section 18 and are pertinent to any modification of critical habitat for this ESU.

ADDENDUM FOR INFORMAL ESA CONSULTATION

ASSESSMENT OF IMPACTS TO CRITICAL HABITAT FOR

Lower Columbia River Steelhead

Salmon Critical Habitat - Primary Constituent Elements

From 50 CFR Part 226

The primary constituent elements determined essential to the conservation of Lower Columbia River Steelhead are as follows:

(1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.

Existing Conditions: No spawning occurs, or is likely to occur, at the project site.

(2) Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide some limited rearing functions. The City of Portland noted that juvenile fish were holding in a protected embayment directly downstream of the project site, in the adjacent Willamette Cove. Conditions are similar enough in the near shore adjacent to the project site to assume some holding may occur here.

(3) Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide resting areas for out-migrating juveniles. See (2) above.

(4) Estuarine areas free of obstruction with water quality, water quantity and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels, and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: Not project is not located in or near estuarine areas.

(5) Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulder and side channels.

Existing Conditions: The project is not located in or near nearshore marine areas.

(6) Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: The project is not located in or near offshore marine areas.

Effects Analysis: The project will result in only slight modifications to the fresh water environment.

Determination of Effect: The project will not result in the destruction or adverse modification of critical habitat for this ESU.

Conservation Measures: Conservation measures are listed in Section 18 and are pertinent to any modification of critical habitat for this ESU.

ADDENDUM FOR INFORMAL ESA CONSULTATION

ASSESSMENT OF IMPACTS TO CRITICAL HABITAT FOR

Upper Willamette River Steelhead

Salmon Critical Habitat - Primary Constituent Elements

From 50 CFR Part 226

The primary constituent elements determined essential to the conservation of Upper Willamette River Steelhead are as follows:

(1) Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.

Existing Conditions: No spawning occurs, or is likely to occur, at the project site.

(2) Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide some limited rearing functions. The City of Portland noted that juvenile fish were holding in a protected embayment directly downstream of the project site, in the adjacent Willamette Cove. Conditions are similar enough in the near shore adjacent to the project site to assume some holding may occur here.

(3) Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

Existing Conditions: The project site is adjacent to shallow, near shore areas that may provide resting areas for out-migrating juveniles. See (2) above.

(4) Estuarine areas free of obstruction with water quality, water quantity and salinity conditions supporting juvenile and adult physiological transitions between fresh-

and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels, and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: Not project is not located in or near estuarine areas.

(5) Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulder and side channels.

Existing Conditions: The project is not located in or near nearshore marine areas.

(6) Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Existing Conditions: The project is not located in or near offshore marine areas.

Effects Analysis: The project will result in only slight modifications to the fresh water environment.

Determination of Effect: The project will not result in the destruction or adverse modification of critical habitat for this ESU.

Conservation Measures: Conservation measures are listed in Section 18 and are pertinent to any modification of critical habitat for this ESU.

D Placement Verification Forms and Compaction Test Results

REC'D 6/29/05

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

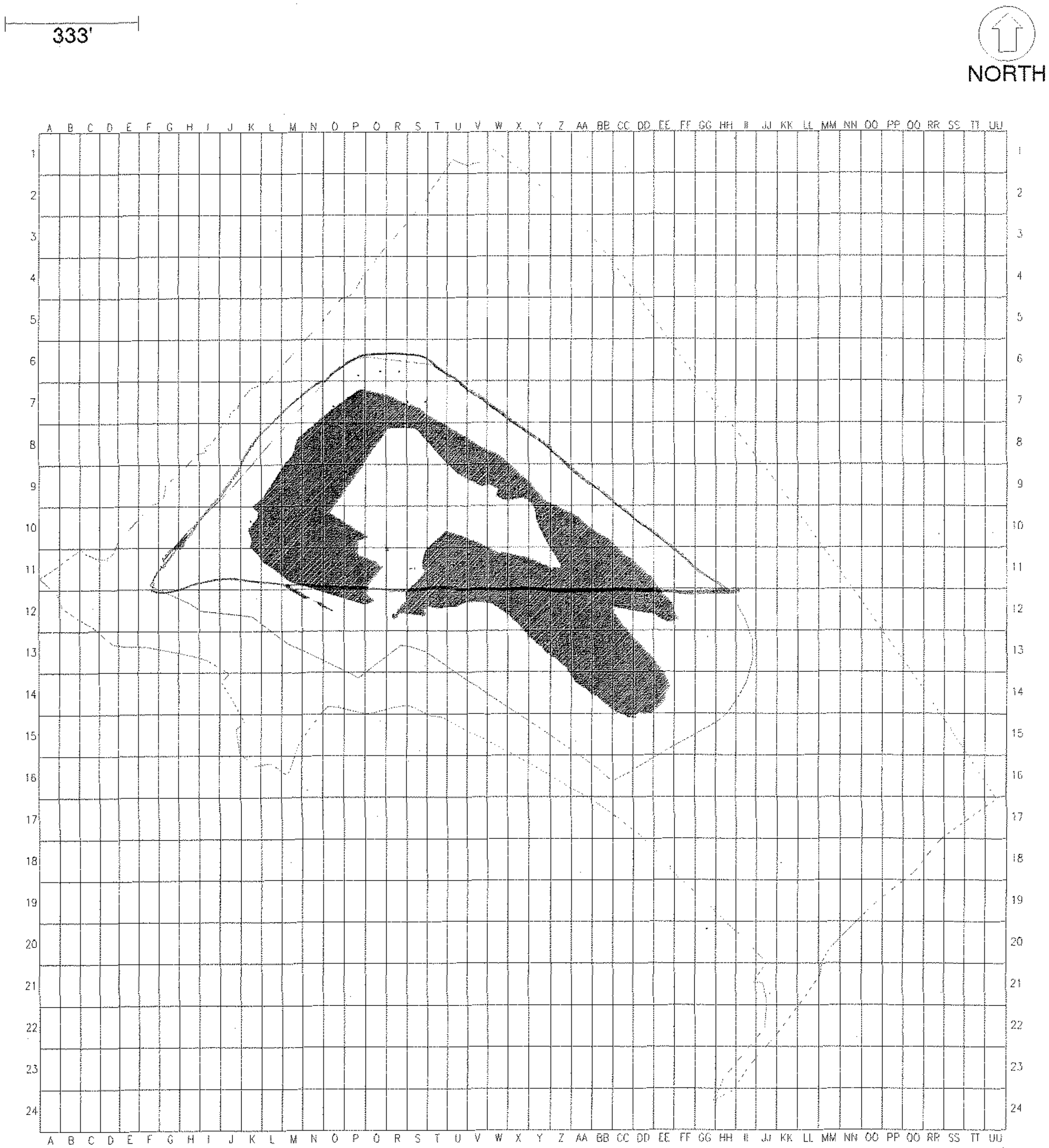
Grid Identification Number: see attached chart (see notes below)

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [x] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

It has been understood between Wilder and E&E that inside the barrier wall, compaction testing is required at locations where fill has been placed above 4". The attached chart shades areas in which compaction testing is required. In addition to these shaded areas, Wilder is seeking approval in the areas within the barrier wall on rows 6-11. Also attached, per special provision section 02140, 1.9H, 1.a, is a survey done by DEA on a 50' grid.

[signature]	6/27/05		
Wilder Representative	Date	Owner Representative	Date



Comment :

Project : Project1

C:\M3005 McCormick and Baxter Project\GPS\Work in Progress\Testing Grid\Project1.tp3 06/27/2005

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick & Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 1	OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction	REPORT SEQUENCE NO.	1
GENERAL CONTRACTOR	Wilder Construction	WEATHER:	Overcast	DATE	6/21/05
SUBJECT:	Material Sampling	PRESENT AT SITE:			

THE FOLLOWING WAS NOTED:

NTI arrived on-site, as requested by Wilder Construction to sample subgrade soils, topsoil, and stockpiled sand. The following samples were obtained:

Sample Location	Sample Type	NGI Lab No.
1	Stockpiled Topsoil	05-226
2	Stockpiled Sand	05-227
3	Subgrade; Dark Brown, Gravelly, Silty Sand	05-228
4	Subgrade; Dark Brown, Gravelly, Silty Sand	05-229
5	Subgrade; Brown, Gravelly, Silty Sand	05-221
6	Subgrade; Brown, Gravelly, Silty Sand	05-222
7	Subgrade (Pond Excavation); Dark Brown, Gravelly, Silty Sand	05-223
8	Subgrade; Dark Brown, Gravelly, Silty Sand	05-224
9	Subgrade; Dark Brown, Gravelly, Silty Sand	05-225

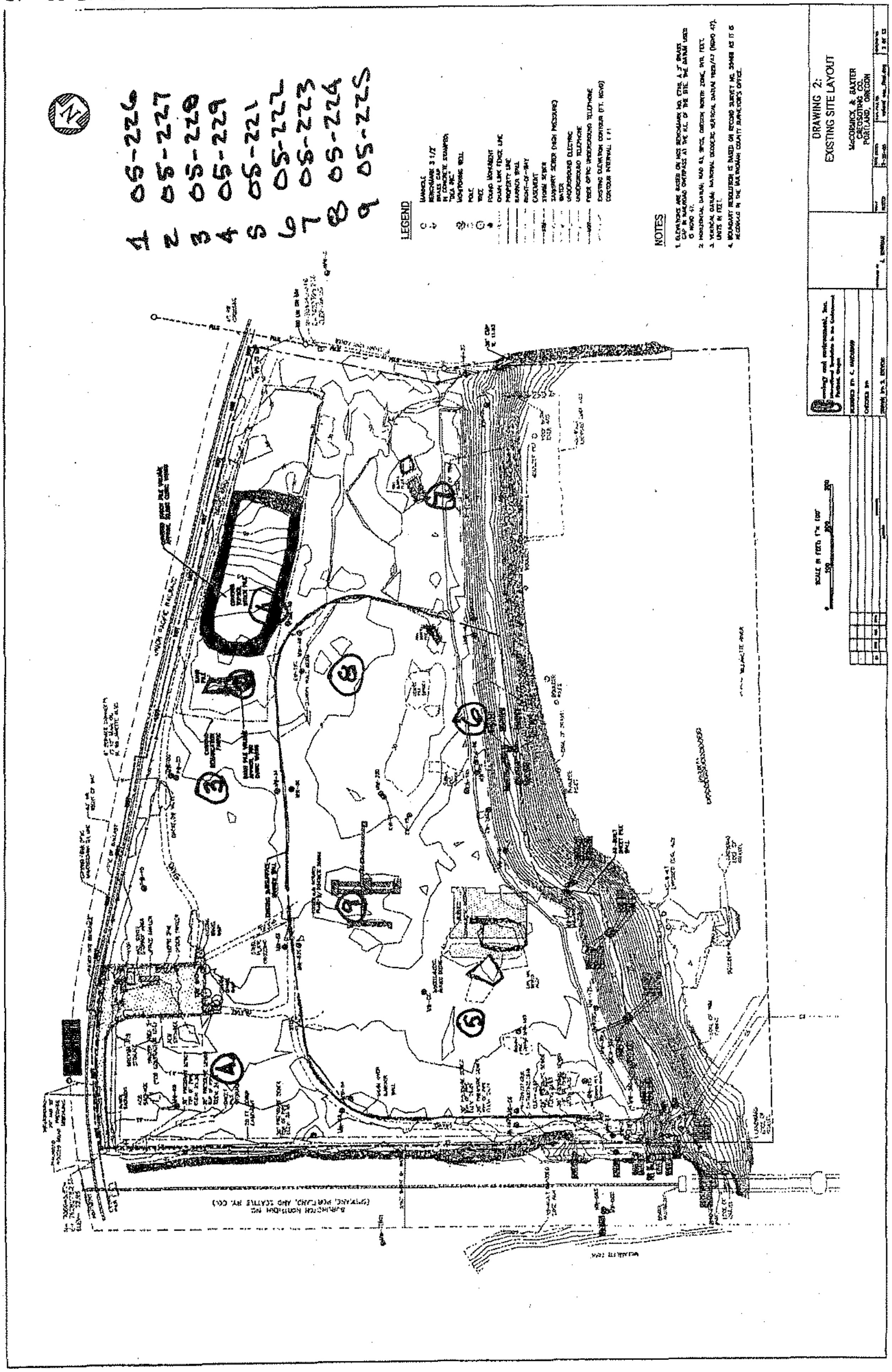
The approximate sample locations are shown on the attached drawing. All samples are to be tested per ASTM D698. NTI informed Jacob Zacharda, Wilder Construction of the sample locations and established a priority for completion of laboratory testing.

FIELD REPRESENTATIVE: Wayne Olsen

REVIEWED BY: Tom Ginsbach

COPIES TO: Jacob Zacharda, Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS* Effective Date: 02/05/04


1 05-226
2 05-227
3 05-228
4 05-229
5 05-221
6 05-222
7 05-223
8 05-224
9 05-225
LEGEND
NOTES
DRAWING 2:
EXISTING SITE LAYOUT
McCORMICK & BAXTER
CREOSOTING CO.
PORTLAND, OREGON

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503/682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 1	OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	2
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/23/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-222)	VISITORS	A. Whitman, P.E., E&E, Inc.

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Compacted Subgrade	*FSG						95% Required
1	Grid P-6	FSG	05-222	115.1	7.6	107.0	93.0	35% Oversize
2	Grid Q-6	FSG	05-222	111.6	7.0	100.0	89.6	28% Oversize
3	Grid R-6	FSG	05-222	102.3	5.8	99.8	97.6	7% Oversize
4	Grid P-6	FSG	05-222	115.1	7.8	102.4	89.0	35% Oversize, Retest Test No. 1
5	Grid P-6	FSG	05-222	108.3	8.2	109.9	100+	21% Oversize, Retest Test No. 4
6	Grid Q-6	FSG	05-222	106.9	7.2	100.5	94.0	18% Oversize, Retest Test No. 2
	Re-Worked, Re-Compacted Subgrade							
7	Grid P-7	FSG	05-222	114.6	13.9	115.5	100+	34% Oversize
8	Grid Q-7	FSG	05-222	112.1	11.2	112.8	100+	29% Oversize
9	Grid O-8	FSG	05-222	112.1	14.5	108.1	96.4	29% Oversize

*FSG = Finished Subgrade

THE FOLLOWING WAS NOTED:

NTI arrived on-site, as requested, to provide in-place nuclear density testing for subgrade within the impermeable cap section. After providing testing at three locations (tests 1-6) within the re-compacted subgrade section, the project engineer, Alexander Whitman, P.E., Ecology & Environment, Inc., indicated no testing of the impermeable cap subgrade was required. Mr. Whitman indicated that testing of fills (reworked, recompacted subgrade) greater than 4 inches in thickness within the impermeable cap was required. NTI then completed additional testing (tests 7-10) in fill areas greater than 4 inches. Test locations and results are listed above. Locations were verified by Wilder Construction Co., GPS locator based on the provided (grided) site plan. Aggregate oversize corrections were provided in the field for each test location. To the best of NTI's knowledge, all final tests provided today met the project requirements of a minimum of 95% of the maximum dry density as determined by ASTM D698 and ASTM D4718. NTI informed Jacob Zacharda, Wilder Construction Co., and Mr. Whitman of all test results and observations.

FIELD REPRESENTATIVE: Jon L. Sparks, C.E.T.

REVIEWED BY: Tom Ginsbach

COPIES TO: Jacob Zacharda, Wilder Construction Co.

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Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	3
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/24/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Friday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-222)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade	*FSG						95% Required
1	Grid P-8	FSG	05-222	111.6	7.1	113.3	100+	28% Oversize
2	Grid N-8	FSG	05-222	110.1	7.0	112.4	100+	25% Oversize
3	Grid K-10	FSG	05-222	106.5	9.3	106.4	99.9	17% Oversize
4	Grid L-10	FSG	05-222	106.5	8.4	105.6	99.2	17% Oversize
5	Grid L-9	FSG	05-222	110.1	5.5	110.4	100+	25% Oversize
6	Grid M-10	FSG	05-222	106.5	8.4	105.6	99.2	17% Oversize
7	Grid M-11	FSG	05-222	107.8	10.3	104.8	97.2	20% Oversize
8	Grid L-11	FSG	05-222	107.8	10.0	104.3	96.8	20% Oversize
9	Grid N-9	FSG	05-222	110.1	10.9	107.8	97.9	25% Oversize
10	Grid M-9	FSG	05-222	107.8	9.6	102.4	95.0	20% Oversize
11	Grid O-9	FSG	05-222	112.6	8.9	118.4	100+	30% Oversize
12	Grid P-9	FSG	05-222	116.6	8.6	123.0	100+	38% Oversize
13	Grid N-10	FSG	05-222	106.5	10.9	105.7	99.2	17% Oversize
14	Grid P-10	FSG	05-222	112.6	8.6	113.6	100+	30% Oversize
15	Grid O-10	FSG	05-222	110.1	8.7	109.1	99.1	25% Oversize

*FSG = Finished Subgrade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested to provide in-place nuclear density testing of the re-worked and re-compacted subgrade within the impermeable cap area. Test locations and results are listed above. Locations were verified by Wilder Construction, GPS locator. Aggregate oversize corrections were provided in the field for each test location. To the best of NTI's knowledge, all tests provided today met the project requirements of a minimum of 95% of maximum dry density as determined by ASTM D698 and ASTM D4718. NGI informed Lena Kennard, Ecology and Environment, Inc., of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PERMIT NO.	
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	3
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/24/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Friday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-222)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
20	Grid M-8	FSG	05-222	107.8	8.9	108.8	100+	20% Oversize
21	Grid Q-8	FSG	05-222	114.6	11.3	116.4	100+	34% Oversize
22	Grid R-7	FSG	05-222	110.1	12.3	111.7	100+	25% Oversize
23	Grid S-7	FSG	05-222	110.1	10.9	109.3	99.3	25% Oversize
24	Grid T-8	FSG	05-222	116.6	8.2	117.4	100+	38% Oversize
25	Grid U-8	FSG	05-222	116.6	10.7	123.1	100+	38% Oversize
16	Grid N-11	FSG	05-222	112.6	8.5	112.5	99.9	30% Oversize
17	Grid O-11	FSG	05-222	112.6	8.5	113.4	100+	30% Oversize
18	Grid P-11	FSG	05-222	107.8	8.9	105.2	97.6	20% Oversize
19	Grid Q-11	FSG	05-222	110.1	8.8	106.9	97.1	25% Oversize

*FSG = Finished Subgrade

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

\\MKL\Daily Reports\Project No. 1600-1699\1604-11\1604-11rjp03.doc/mkl

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 1	OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	4
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/25/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Saturday
WEATHER	Partly Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-222, 05-224, & 05-225)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade	*FSG						95% Required
1	Grid V-8	FSG	05-225	121.4	9.0	118.8	97.9	25% Oversize
2	Grid V-9	FSG	05-222	110.1	14.1	109.0	99.0	25% Oversize
3	Grid W-9	FSG	05-222	112.6	11.7	112.5	99.9	30% Oversize
4	Grid X-9	FSG	05-222	115.1	7.8	118.3	100+	35% Oversize
5	Grid Y-10	FSG	05-222	106.5	9.4	106.2	99.7	17% Oversize
6	Grid Z-10	FSG	05-222	112.6	9.0	110.1	97.8	30% Oversize
7	Grid AA-10	FSG	05-222	115.1	11.0	113.0	98.2	35% Oversize
8	Grid BB-10	FSG	05-222	105.6	10.8	106.5	100+	15% Oversize
9	Grid AA-11	FSG	05-222	112.6	9.0	111.5	99.0	30% Oversize
10	Grid BB-11	FSG	05-222	107.8	12.8	109.7	100+	20% Oversize
11	Grid CC-11	FSG	05-222	105.6	11.4	103.6	98.1	15% Oversize
12	Grid DD-11	FSG	05-222	107.8	15.6	106.2	98.5	20% Oversize
13	Grid AA-12	FSG	05-225	121.8	10.9	116.7	95.8	26% Oversize
14	Grid BB-12	FSG	05-225	118.6	9.3	108.3	91.3	18% Oversize
15	Grid CC-12	FSG	05-225	119.8	10.5	109.2	91.2	21% Oversize
16	Grid DD-12	FSG	05-225	121.4	10.1	110.9	91.4	25% Oversize
17	Grid EE-12	FSG	05-225	115.6	9.0	100.1	86.6	10% Oversize
18	Grid T-11	FSG	05-224	115.2	5.1	117.7	100+	27% Oversize

*FSG = Finished Subgrade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested to provide in-place nuclear density for the reworked and recompacted subgrade within the impermeable cap area. Test locations and results are listed above. To the best of NTI's knowledge, all tests, with the exception of tests 14, 15, 16, & 17, met the project requirements of a minimum of 95% of maximum dry density as determined by ASTM D698 and ASTM D4718. NGI informed Wilder Construction and E+E personnel of all test results and locations. Note: test locations to be verified by Wilder Construction GPS.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach TG

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

As staked_62405 (2)
All staked points - As stakedAll staked points - As staked
Project : WILC24_RTK
User nameKJMDate & Time11:13:49 AM 6/27/2005
Coordinate SystemUS State Plane 1983ZoneOregon North 3601
Project DatumNAD 1983 (Conus)
Vertical DatumNGVD29/47Geoid ModelGEOID99 (Conus)
Coordinate UnitsInternational feet
Distance UnitsInternational feet
Height UnitsUS survey feet

Name	Code	Design northing	Design easting	Delta north	Delta east	Cut/Fill
12369CK	12369	705130.659	7627908.307	-0.204	-0.131	-0.006
13715CK	13715	705139.628	7628595.702	-0.030	0.254	0.028
13716CK	13716	705072.975	7628681.058	0.240	-0.172	-0.036
13717CK	13717	705020.330	7628746.770	-0.058	-0.359	0.118
13718CK	13718	704980.895	7628797.502	0.291	0.216	0.069
13719CK	13719	704954.821	7628832.648	-0.484	0.044	0.141
13720CK	13720	704941.721	7628848.393	-0.027	-0.066	0.106
13721CK	13721	704917.735	7628873.462	-0.145	0.317	0.030
4978CK	4978	705124.305	7628602.540	0.225	0.218	0.168
4983CK	4983	705090.835	7628639.685	-0.304	0.011	0.031
4988CK	4988	705057.365	7628676.830	0.098	0.265	0.002
4993CK	4993	705023.895	7628713.975	-0.114	-0.220	-0.015
4998CK	4998	704990.425	7628751.120	-0.133	0.550	-0.053
5003CK	5003	704956.955	7628788.265	-0.329	-0.257	0.069
5008CK	5008	704923.485	7628825.410	0.167	-0.267	0.023
5013CK	5013	704890.015	7628862.555	-0.205	0.335	0.077
5018CK	5018	704856.545	7628899.700	0.011	0.070	0.033
5081CK	5081	705431.494	7628246.682	-0.230	0.065	0.082
5086CK	5086	705398.024	7628283.827	-0.334	0.439	0.238
5091CK	5091	705364.554	7628320.972	0.337	0.266	0.198
5096CK	5096	705331.084	7628358.117	-0.261	0.046	0.099
5101CK	5101	705297.614	7628395.262	-0.492	0.514	0.070
5106CK	5106	705264.144	7628432.407	-0.499	0.471	0.140
5111CK	5111	705230.674	7628469.552	-0.325	0.247	-0.014
5116CK	5116	705197.204	7628506.697	-0.185	0.322	0.146
5121CK	5121	705163.734	7628543.843	0.109	0.503	0.152
5799CK	5799	705087.160	7628569.070	0.405	0.194	0.242
5804CK	5804	705053.690	7628606.215	-0.039	0.427	0.151
5809CK	5809	705020.220	7628643.360	0.011	0.392	0.153
5814CK	5814	704986.750	7628680.505	0.288	-0.012	0.077
5819CK	5819	704953.280	7628717.650	-0.277	0.544	0.106
5824CK	5824	704919.810	7628754.795	0.286	-0.019	0.083
5829CK	5829	704886.340	7628791.940	0.125	-0.328	0.048
5834CK	5834	704852.870	7628829.085	-0.326	-0.324	0.088
5839CK	5839	704819.400	7628866.230	-0.453	0.189	0.113
5911CK	5911	705561.700	7628027.487	-0.336	0.519	0.268
5916CK	5916	705528.229	7628064.632	0.768	-0.426	0.038
5921CK	5921	705494.759	7628101.777	0.103	0.346	-0.030
5926CK	5926	705461.289	7628138.922	0.220	0.415	-0.011
5931CK	5931	705427.819	7628176.067	0.452	-0.009	-0.067
5936CK	5936	705394.349	7628213.212	0.232	-0.399	-0.067
5941CK	5941	705360.879	7628250.357	0.103	-0.711	0.118
5946CK	5946	705327.409	7628287.502	0.196	0.349	-0.074
5951CK	5951	705293.939	7628324.647	0.436	-0.375	0.006
5956CK	5956	705260.469	7628361.792	0.551	-0.144	0.118
5961CK	5961	705226.999	7628398.937	0.308	-0.416	-0.078
5966CK	5966	705193.529	7628436.082	0.313	-0.175	0.019
5971CK	5971	705160.059	7628473.227	1.394	-0.617	0.037

5976CK	5976	705126.589	7628510.372	0.446	0.128	0.002
6732CK	6732	705050.015	7628535.600	-0.351	-0.506	0.133
6737CK	6737	705016.545	7628572.745	0.062	0.024	0.016
6742CK	6742	704983.075	7628609.890	-0.029	0.068	-0.007
6747CK	6747	704949.605	7628647.035	0.136	0.145	0.096
6752CK	6752	704916.135	7628684.180	-0.129	0.147	0.024
6757CK	6757	704882.665	7628721.325	-0.310	0.282	0.055
6762CK	6762	704849.195	7628758.470	-0.559	-0.078	0.140
6767CK	6767	704815.725	7628795.615	0.300	-0.573	0.116
6772CK	6772	704782.255	7628832.760	-0.284	0.076	0.012
6846CK	6846	705524.554	7627994.016	0.452	-0.421	0.157
6851CK	6851	705491.084	7628031.162	-0.319	-0.005	-0.114
6856CK	6856	705457.614	7628068.307	-0.259	-0.283	0.036
6861CK	6861	705424.144	7628105.452	0.208	0.228	0.021
6866CK	6866	705390.674	7628142.597	0.000	0.437	0.214
6871CK	6871	705357.204	7628179.742	-0.132	0.247	0.007
6876CK	6876	705323.734	7628216.887	-0.290	0.121	-0.053
6881CK	6881	705290.264	7628254.032	-0.314	0.472	0.076
6886CK	6886	705256.794	7628291.177	-0.397	0.215	0.003
6891CK	6891	705223.324	7628328.322	-0.247	0.394	-0.045
6896CK	6896	705189.854	7628365.467	-0.111	0.492	0.016
6901CK	6901	705156.384	7628402.612	-0.701	0.131	0.108
6906CK	6906	705122.914	7628439.757	-0.450	0.254	0.002
6911CK	6911	705089.444	7628476.902	-0.657	0.016	-0.004
7662CK	7662	705012.870	7628502.130	-0.052	-0.247	0.079
7667CK	7667	704979.400	7628539.275	0.208	-0.440	0.023
7672CK	7672	704945.930	7628576.420	0.240	0.205	0.021
7677CK	7677	704912.460	7628613.565	0.141	0.211	-0.057
7682CK	7682	704878.990	7628650.710	-0.229	-0.092	0.018
7687CK	7687	704845.520	7628687.855	0.087	0.032	0.005
7692CK	7692	704812.050	7628725.000	0.040	-0.206	0.106
7697CK	7697	704778.580	7628762.145	0.341	0.048	0.093
7702CK	7702	704745.110	7628799.290	0.791	-0.181	0.127
7791CK	7791	705386.999	7628071.982	-0.386	0.068	0.111
7796CK	7796	705353.529	7628109.127	0.366	0.137	0.067
7801CK	7801	705320.059	7628146.272	-0.387	0.300	0.005
7806CK	7806	705286.589	7628183.417	0.319	0.286	0.004
7811CK	7811	705253.119	7628220.562	-0.378	0.334	0.127
7816CK	7816	705219.649	7628257.707	-0.190	-0.059	0.019
7821CK	7821	705186.179	7628294.852	0.078	0.159	0.109
7826CK	7826	705152.709	7628331.997	-0.260	-0.038	0.119
7831CK	7831	705119.239	7628369.142	-0.453	-0.067	-0.062
7836CK	7836	705085.769	7628406.287	-0.425	0.610	-0.030
7841CK	7841	705052.299	7628443.432	-0.073	0.339	0.011
8592CK	8592	704975.725	7628468.659	0.295	0.133	0.041
8597CK	8597	704942.255	7628505.805	0.336	-0.145	0.123
8602CK	8602	704908.785	7628542.950	-0.132	-0.029	-0.035
8607CK	8607	704875.315	7628580.095	-0.200	0.486	-0.001
8612CK	8612	704841.845	7628617.240	-0.414	0.384	0.090
8617CK	8617	704808.375	7628654.385	0.050	-0.331	-0.080
8622CK	8622	704774.905	7628691.530	-0.331	0.342	0.079
8627CK	8627	704741.434	7628728.675	0.153	0.352	-0.015
8632CK	8632	704707.964	7628765.820	-0.174	0.025	0.102

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Leica VIP Stakeout V 2.23
Instrument    : TCA1800L, Serial 422580, (not named)
User Templ.   : FT16
Meas. File    : FILE05.GSI
Program Start : 06/24/2005 at 08:32

Point         : 11408, Ht. Shift=                   0.000ft
Design        : E=          7627826.666ft N=          705338.829ft
                Elev.=             32.980ft
               sH=                 33.172ft dH=           -0.192ft
               hr=                  7.000ft

Point         : 11413, Ht. Shift=                   0.000ft
Design        : E=          7627863.811ft N=          705305.359ft
                Elev.=             33.990ft
               sH=                 34.049ft dH=           -0.059ft
               hr=                  7.000ft

Point         : 11418, Ht. Shift=                   0.000ft
Design        : E=          7627900.956ft N=          705271.889ft
                Elev.=             34.919ft
               sH=                 34.921ft dH=           -0.002ft
               hr=                  7.000ft

Point         : 11423, Ht. Shift=                   0.000ft
Design        : E=          7627938.102ft N=          705238.419ft
                Elev.=             33.964ft
               sH=                 33.899ft dH=            0.065ft
               hr=                  7.000ft

Point         : 11428, Ht. Shift=                   0.000ft
Design        : E=          7627975.247ft N=          705204.949ft
                Elev.=             32.965ft
               sH=                 33.017ft dH=           -0.052ft
               hr=                  7.000ft

Point         : 11433, Ht. Shift=                   0.000ft
Design        : E=          7628012.392ft N=          705171.479ft
                Elev.=             31.973ft
               sH=                 31.955ft dH=            0.018ft
               hr=                  7.000ft

Point         : 11438, Ht. Shift=                   0.000ft
Design        : E=          7628049.537ft N=          705138.009ft
                Elev.=             31.999ft
               sH=                 31.989ft dH=            0.010ft
               hr=                  7.000ft

Point         : 11443, Ht. Shift=                   0.000ft
Design        : E=          7628086.682ft N=          705104.539ft
                Elev.=             32.594ft
               sH=                 32.505ft dH=            0.089ft
               hr=                  7.000ft

Point         : 11996, Ht. Shift=                   0.000ft
Design        : E=          7628053.212ft N=          705067.394ft
                Elev.=             33.362ft
               sH=                 33.255ft dH=            0.107ft
               hr=                  7.000ft

Point         : 11991, Ht. Shift=                   0.000ft
Design        : E=          7628016.067ft N=          705100.864ft
                Elev.=             32.983ft
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          sH=              33.036ft dH=           -0.053ft
          hr=              7.000ft

Point     : 11986, Ht. Shift=             0.000ft
Design    : E=       7627978.922ft N=      705134.334ft
            Elev.=           32.821ft
          sH=              32.932ft dH=           -0.111ft
          hr=              7.000ft

Point     : 11981, Ht. Shift=             0.000ft
Design    : E=       7627941.777ft N=      705167.804ft
            Elev.=           33.089ft
          sH=              33.148ft dH=           -0.059ft
          hr=              7.000ft

Point     : 11976, Ht. Shift=             0.000ft
Design    : E=       7627904.631ft N=      705201.274ft
            Elev.=           34.126ft
          sH=              34.150ft dH=           -0.024ft
          hr=              7.000ft

Point     : 11971, Ht. Shift=             0.000ft
Design    : E=       7627867.486ft N=      705234.744ft
            Elev.=           35.099ft
          sH=              35.069ft dH=            0.030ft
          hr=              7.000ft

Point     : 11966, Ht. Shift=             0.000ft
Design    : E=       7627830.341ft N=      705268.214ft
            Elev.=           34.114ft
          sH=              34.134ft dH=           -0.020ft
          hr=              7.000ft

Point     : 11961, Ht. Shift=             0.000ft
Design    : E=       7627793.196ft N=      705301.684ft
            Elev.=           33.115ft
          sH=              33.221ft dH=           -0.106ft
          hr=              7.000ft

Point     : 12349, Ht. Shift=             0.000ft
Design    : E=       7627759.726ft N=      705264.539ft
            Elev.=           33.240ft
          sH=              33.339ft dH=           -0.099ft
          hr=              7.000ft

Point     : 12354, Ht. Shift=             0.000ft
Design    : E=       7627796.871ft N=      705231.069ft
            Elev.=           34.238ft
          sH=              34.216ft dH=            0.022ft
          hr=              7.000ft

Point     : 12359, Ht. Shift=             0.000ft
Design    : E=       7627834.016ft N=      705197.599ft
            Elev.=           35.237ft
          sH=              35.156ft dH=            0.081ft
          hr=              7.000ft

Point     : 12364, Ht. Shift=             0.000ft
Design    : E=       7627871.161ft N=      705164.129ft
            Elev.=           34.294ft
          sH=              34.314ft dH=           -0.020ft
          hr=              7.000ft
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Point     : 12369, Ht. Shift=              0.000ft
Design    : E=        7627908.307ft N=         705130.659ft
            Elev.=             33.646ft
           sH=              33.652ft dH=          -0.006ft
           hr=               7.000ft

Point     : 12374, Ht. Shift=              0.000ft
Design    : E=        7627945.452ft N=         705097.189ft
            Elev.=             33.811ft
           sH=              33.801ft dH=           0.010ft
           hr=               7.000ft

Point     : 12379, Ht. Shift=              0.000ft
Design    : E=        7627982.597ft N=         705063.719ft
            Elev.=             33.984ft
           sH=              33.896ft dH=           0.088ft
           hr=               7.000ft

Point     : 12384, Ht. Shift=              0.000ft
Design    : E=        7628019.742ft N=         705030.249ft
            Elev.=             34.182ft
           sH=              34.162ft dH=           0.020ft
           hr=               7.000ft

Point     : 12712, Ht. Shift=              0.000ft
Design    : E=        7627986.272ft N=         704993.104ft
            Elev.=             34.576ft
           sH=              34.676ft dH=          -0.100ft
           hr=               7.000ft

Point     : 12707, Ht. Shift=              0.000ft
Design    : E=        7627949.127ft N=         705026.574ft
            Elev.=             34.972ft
           sH=              35.017ft dH=          -0.045ft
           hr=               7.000ft

Point     : 12702, Ht. Shift=              0.000ft
Design    : E=        7627911.982ft N=         705060.044ft
            Elev.=             34.803ft
           sH=              34.819ft dH=          -0.016ft
           hr=               7.000ft

Point     : 12697, Ht. Shift=              0.000ft
Design    : E=        7627874.836ft N=         705093.514ft
            Elev.=             34.634ft
           sH=              34.440ft dH=           0.194ft
           hr=               7.000ft

Point     : 12692, Ht. Shift=              0.000ft
Design    : E=        7627837.691ft N=         705126.984ft
            Elev.=             34.466ft
           sH=              34.525ft dH=          -0.059ft
           hr=               7.000ft

Point     : 12687, Ht. Shift=              0.000ft
Design    : E=        7627800.546ft N=         705160.454ft
            Elev.=             35.373ft
           sH=              35.304ft dH=           0.069ft
           hr=               7.000ft

Point     : 12682, Ht. Shift=              0.000ft
Design    : E=        7627763.401ft N=         705193.924ft
            Elev.=             34.362ft
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          sH=             34.334ft dH=          0.028ft
          hr=             7.000ft

Point     : 12677, Ht. Shift=              0.000ft
Design    : E=       7627726.256ft N=    705227.394ft
           Elev.=              33.365ft
          sH=             33.456ft dH=         -0.091ft
          hr=             7.000ft

Point     : 12973, Ht. Shift=              0.000ft
Design    : E=       7627692.786ft N=    705190.249ft
           Elev.=              33.490ft
          sH=             33.692ft dH=         -0.202ft
          hr=             7.000ft

Point     : 12978, Ht. Shift=              0.000ft
Design    : E=       7627729.931ft N=    705156.779ft
           Elev.=              34.486ft
          sH=             34.487ft dH=         -0.001ft
          hr=             7.000ft

Point     : 12983, Ht. Shift=              0.000ft
Design    : E=       7627767.076ft N=    705123.309ft
           Elev.=              35.508ft
          sH=             35.486ft dH=          0.022ft
          hr=             7.000ft

Point     : 12988, Ht. Shift=              0.000ft
Design    : E=       7627804.221ft N=    705089.839ft
           Elev.=              35.348ft
          sH=             35.329ft dH=          0.019ft
          hr=             7.000ft

Point     : 12993, Ht. Shift=              0.000ft
Design    : E=       7627841.366ft N=    705056.369ft
           Elev.=              34.939ft
          sH=             34.950ft dH=         -0.011ft
          hr=             7.000ft

Point     : 12998, Ht. Shift=              0.000ft
Design    : E=       7627878.512ft N=    705022.899ft
           Elev.=              34.531ft
          sH=             34.556ft dH=         -0.025ft
          hr=             7.000ft

Point     : 13003, Ht. Shift=              0.000ft
Design    : E=       7627915.657ft N=    704989.429ft
           Elev.=              34.129ft
          sH=             34.089ft dH=          0.040ft
          hr=             7.000ft

Point     : 13008, Ht. Shift=              0.000ft
Design    : E=       7627952.802ft N=    704955.959ft
           Elev.=              33.699ft
          sH=             33.727ft dH=         -0.028ft
          hr=             7.000ft

Point     : 13013, Ht. Shift=              0.000ft
Design    : E=       7627989.947ft N=    704922.488ft
           Elev.=              33.277ft
          sH=             33.255ft dH=          0.022ft
          hr=             7.000ft
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Point       : 12717, Ht. Shift=              0.000ft
Design      : E=       7628023.417ft N=         704959.634ft
               Elev.=            33.830ft
              sH=             33.824ft dH=             0.006ft
              hr=              7.000ft

Point       : 12722, Ht. Shift=              0.000ft
Design      : E=       7628060.562ft N=         704926.164ft
               Elev.=            32.914ft
              sH=             32.931ft dH=            -0.017ft
              hr=              7.000ft

Point       : 12389, Ht. Shift=              0.000ft
Design      : E=       7628056.887ft N=         704996.779ft
               Elev.=            34.279ft
              sH=             34.340ft dH=            -0.061ft
              hr=              7.000ft

Point       : 12394, Ht. Shift=              0.000ft
Design      : E=       7628094.032ft N=         704963.309ft
               Elev.=            33.486ft
              sH=             33.594ft dH=            -0.108ft
              hr=              7.000ft

Point       : 12399, Ht. Shift=              0.000ft
Design      : E=       7628131.177ft N=         704929.839ft
               Elev.=            32.733ft
              sH=             32.725ft dH=             0.008ft
              hr=              7.000ft

Point       : 12001, Ht. Shift=              0.000ft
Design      : E=       7628090.357ft N=         705033.924ft
               Elev.=            34.012ft
              sH=             33.993ft dH=             0.019ft
              hr=              7.000ft

Point       : 11448, Ht. Shift=              0.000ft
Design      : E=       7628123.827ft N=         705071.069ft
               Elev.=            33.157ft
              sH=             33.003ft dH=             0.154ft
              hr=              7.000ft

Point       : 11453, Ht. Shift=              0.000ft
Design      : E=       7628160.972ft N=         705037.599ft
               Elev.=            33.726ft
              sH=             33.736ft dH=            -0.010ft
              hr=              7.000ft

Point       : 12006, Ht. Shift=              0.000ft
Design      : E=       7628127.502ft N=         705000.454ft
               Elev.=            34.103ft
              sH=             34.111ft dH=            -0.008ft
              hr=              7.000ft

Point       : 12011, Ht. Shift=              0.000ft
Design      : E=       7628164.647ft N=         704966.984ft
               Elev.=            33.392ft
              sH=             33.343ft dH=             0.049ft
              hr=              7.000ft

Point       : 11458, Ht. Shift=              0.000ft
Design      : E=       7628198.117ft N=         705004.129ft
               Elev.=            34.049ft
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                 sH=          33.986ft dH=           0.063ft
                 hr=          7.000ft

Point            : 11463, Ht. Shift=           0.000ft
Design           : E=     7628235.262ft N=     704970.659ft
                  Elev.=        33.467ft
                 sH=          33.387ft dH=           0.080ft
                 hr=          7.000ft

Point            : 12016, Ht. Shift=           0.000ft
Design           : E=     7628201.792ft N=     704933.514ft
                  Elev.=        32.643ft
                 sH=          32.667ft dH=          -0.024ft
                 hr=          7.000ft

Point            : 12021, Ht. Shift=           0.000ft
Design           : E=     7628238.937ft N=     704900.044ft
                  Elev.=        32.047ft
                 sH=          31.996ft dH=           0.051ft
                 hr=          7.000ft

Point            : 11468, Ht. Shift=           0.000ft
Design           : E=     7628272.407ft N=     704937.189ft
                  Elev.=        32.900ft
                 sH=          32.936ft dH=          -0.036ft
                 hr=          7.000ft

Point            : 11473, Ht. Shift=           0.000ft
Design           : E=     7628309.552ft N=     704903.719ft
                  Elev.=        32.491ft
                 sH=          32.453ft dH=           0.038ft
                 hr=          7.000ft

Point            : 10624, Ht. Shift=           0.000ft
Design           : E=     7628343.022ft N=     704940.864ft
                  Elev.=        33.424ft
                 sH=          33.456ft dH=          -0.032ft
                 hr=          7.000ft

Point            : 10619, Ht. Shift=           0.000ft
Design           : E=     7628305.877ft N=     704974.334ft
                  Elev.=        33.664ft
                 sH=          33.646ft dH=           0.018ft
                 hr=          7.000ft

Point            : 10614, Ht. Shift=           0.000ft
Design           : E=     7628268.732ft N=     705007.804ft
                  Elev.=        33.542ft
                 sH=          33.527ft dH=           0.015ft
                 hr=          7.000ft

Point            : 10609, Ht. Shift=           0.000ft
Design           : E=     7628231.587ft N=     705041.274ft
                  Elev.=        33.263ft
                 sH=          33.238ft dH=           0.025ft
                 hr=          7.000ft

Point            : 10604, Ht. Shift=           0.000ft
Design           : E=     7628194.442ft N=     705074.744ft
                  Elev.=        32.860ft
                 sH=          32.880ft dH=          -0.020ft
                 hr=          7.000ft
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Point          : 10599, Ht. Shift=              0.000ft
Design         : E=         7628157.297ft N=          705108.214ft
                 Elev.=              32.332ft
                sH=                32.364ft dH=            -0.032ft
                hr=                7.000ft

Point          : 10594, Ht. Shift=              0.000ft
Design         : E=         7628120.152ft N=          705141.684ft
                 Elev.=              31.768ft
                sH=                31.716ft dH=             0.052ft
                hr=                7.000ft

Point          : 10589, Ht. Shift=              0.000ft
Design         : E=         7628083.007ft N=          705175.154ft
                 Elev.=              31.213ft
                sH=                31.237ft dH=            -0.024ft
                hr=                7.000ft

Point          : 10584, Ht. Shift=              0.000ft
Design         : E=         7628045.862ft N=          705208.624ft
                 Elev.=              31.849ft
                sH=                31.693ft dH=             0.156ft
                hr=                7.000ft

Point          : 10579, Ht. Shift=              0.000ft
Design         : E=         7628008.717ft N=          705242.094ft
                 Elev.=              32.841ft
                sH=                32.744ft dH=             0.097ft
                hr=                7.000ft

Point          : 10574, Ht. Shift=              0.000ft
Design         : E=         7627971.572ft N=          705275.564ft
                 Elev.=              33.839ft
                sH=                33.827ft dH=             0.012ft
                hr=                7.000ft

Point          : 10569, Ht. Shift=              0.000ft
Design         : E=         7627934.426ft N=          705309.034ft
                 Elev.=              34.772ft
                sH=                34.797ft dH=            -0.025ft
                hr=                7.000ft

Point          : 10564, Ht. Shift=              0.000ft
Design         : E=         7627897.281ft N=          705342.504ft
                 Elev.=              33.865ft
                sH=                33.859ft dH=             0.006ft
                hr=                7.000ft

Point          : 10559, Ht. Shift=              0.000ft
Design         : E=         7627860.136ft N=          705375.974ft
                 Elev.=              32.890ft
                sH=                32.861ft dH=             0.029ft
                hr=                7.000ft

Point          : 9634, Ht. Shift=              0.000ft
Design         : E=         7627893.606ft N=          705413.119ft
                 Elev.=              32.800ft
                sH=                32.799ft dH=             0.001ft
                hr=                7.000ft

Point          : 9639, Ht. Shift=              0.000ft
Design         : E=         7627930.751ft N=          705379.649ft
                 Elev.=              33.730ft
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          sH=            33.701ft dH=           0.029ft
          hr=            7.000ft

Point     : 9644, Ht. Shift=            0.000ft
Design    : E=       7627967.897ft N=       705346.179ft
           Elev.=             34.625ft
          sH=            34.652ft dH=          -0.027ft
          hr=            7.000ft

Point     : 9649, Ht. Shift=            0.000ft
Design    : E=       7628005.042ft N=       705312.709ft
           Elev.=             33.713ft
          sH=            33.740ft dH=          -0.027ft
          hr=            7.000ft

Point     : 9654, Ht. Shift=            0.000ft
Design    : E=       7628042.187ft N=       705279.239ft
           Elev.=             32.717ft
          sH=            32.760ft dH=          -0.043ft
          hr=            7.000ft

Point     : 9659, Ht. Shift=            0.000ft
Design    : E=       7628079.332ft N=       705245.769ft
           Elev.=             31.725ft
          sH=            31.645ft dH=           0.080ft
          hr=            7.000ft

Point     : 9664, Ht. Shift=            0.000ft
Design    : E=       7628116.477ft N=       705212.299ft
           Elev.=             30.853ft
          sH=            30.985ft dH=          -0.132ft
          hr=            7.000ft

Point     : 9669, Ht. Shift=            0.000ft
Design    : E=       7628153.622ft N=       705178.829ft
           Elev.=             30.931ft
          sH=            30.944ft dH=          -0.013ft
          hr=            7.000ft

Point     : 9674, Ht. Shift=            0.000ft
Design    : E=       7628190.767ft N=       705145.359ft
           Elev.=             31.491ft
          sH=            31.521ft dH=          -0.030ft
          hr=            7.000ft

Point     : 9679, Ht. Shift=            0.000ft
Design    : E=       7628227.912ft N=       705111.889ft
           Elev.=             31.971ft
          sH=            32.000ft dH=          -0.029ft
          hr=            7.000ft

Point     : 9684, Ht. Shift=            0.000ft
Design    : E=       7628265.057ft N=       705078.419ft
           Elev.=             32.310ft
          sH=            32.301ft dH=           0.009ft
          hr=            7.000ft

Point     : 9689, Ht. Shift=            0.000ft
Design    : E=       7628302.202ft N=       705044.949ft
           Elev.=             32.609ft
          sH=            32.586ft dH=           0.023ft
          hr=            7.000ft
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Point        : 9694, Ht. Shift=                 0.000ft
Design       : E=        7628339.347ft N=          705011.479ft
               Elev.=            32.809ft
              sH=               32.779ft dH=              0.030ft
              hr=                7.000ft

Point        : 9699, Ht. Shift=                 0.000ft
Design       : E=        7628376.492ft N=          704978.009ft
               Elev.=            32.903ft
              sH=               32.945ft dH=             -0.042ft
              hr=                7.000ft

Point        : 8771, Ht. Shift=                 0.000ft
Design       : E=        7628409.962ft N=          705015.154ft
               Elev.=            31.890ft
              sH=               31.937ft dH=             -0.047ft
              hr=                7.000ft

Point        : 8766, Ht. Shift=                 0.000ft
Design       : E=        7628372.817ft N=          705048.624ft
               Elev.=            31.819ft
              sH=               31.839ft dH=             -0.020ft
              hr=                7.000ft

Point        : 8761, Ht. Shift=                 0.000ft
Design       : E=        7628335.672ft N=          705082.094ft
               Elev.=            31.646ft
              sH=               31.730ft dH=             -0.084ft
              hr=                7.000ft

Point        : 8756, Ht. Shift=                 0.000ft
Design       : E=        7628298.527ft N=          705115.564ft
               Elev.=            31.337ft
              sH=               31.231ft dH=              0.106ft
              hr=                7.000ft

Point        : 8751, Ht. Shift=                 0.000ft
Design       : E=        7628261.382ft N=          705149.034ft
               Elev.=            31.134ft
              sH=               31.037ft dH=              0.097ft
              hr=                7.000ft

Point        : 8746, Ht. Shift=                 0.000ft
Design       : E=        7628224.237ft N=          705182.504ft
               Elev.=            31.360ft
              sH=               31.349ft dH=              0.011ft
              hr=                7.000ft

Point        : 8741, Ht. Shift=                 0.000ft
Design       : E=        7628187.092ft N=          705215.974ft
               Elev.=            31.596ft
              sH=               31.631ft dH=             -0.035ft
              hr=                7.000ft

Point        : 8736, Ht. Shift=                 0.000ft
Design       : E=        7628149.947ft N=          705249.444ft
               Elev.=            31.839ft
              sH=               31.792ft dH=              0.047ft
              hr=                7.000ft

Point        : 8731, Ht. Shift=                 0.000ft
Design       : E=        7628112.802ft N=          705282.914ft
               Elev.=            32.086ft
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         sH=             32.088ft dH=           -0.002ft
         hr=             7.000ft

Point    : 8726, Ht. Shift=            0.000ft
Design   : E=        7628075.657ft N=       705316.384ft
          Elev.=            32.703ft
         sH=             32.693ft dH=            0.010ft
         hr=             7.000ft

Point    : 8721, Ht. Shift=            0.000ft
Design   : E=        7628038.512ft N=       705349.854ft
          Elev.=            33.587ft
         sH=             33.572ft dH=            0.015ft
         hr=             7.000ft

Point    : 8716, Ht. Shift=            0.000ft
Design   : E=        7628001.367ft N=       705383.324ft
          Elev.=            34.495ft
         sH=             34.518ft dH=           -0.023ft
         hr=             7.000ft

Point    : 8711, Ht. Shift=            0.000ft
Design   : E=        7627964.221ft N=       705416.794ft
          Elev.=            33.529ft
         sH=             33.527ft dH=            0.002ft
         hr=             7.000ft

Point    : 8706, Ht. Shift=            0.000ft
Design   : E=        7627927.076ft N=       705450.264ft
          Elev.=            32.709ft
         sH=             32.737ft dH=           -0.028ft
         hr=             7.000ft

Point    : 7776, Ht. Shift=            0.000ft
Design   : E=        7627960.546ft N=       705487.409ft
          Elev.=            32.688ft
         sH=             32.759ft dH=           -0.071ft
         hr=             7.000ft

Point    : 7781, Ht. Shift=            0.000ft
Design   : E=        7627997.692ft N=       705453.939ft
          Elev.=            33.086ft
         sH=             33.100ft dH=           -0.014ft
         hr=             7.000ft

Point    : 7786, Ht. Shift=            0.000ft
Design   : E=        7628034.837ft N=       705420.469ft
          Elev.=            33.562ft
         sH=             33.542ft dH=            0.020ft
         hr=             7.000ft

Point    : 7791, Ht. Shift=            0.000ft
Design   : E=        7628071.982ft N=       705386.999ft
          Elev.=            34.083ft
         sH=             33.972ft dH=            0.111ft
         hr=             7.000ft

Point    : 9521, Ht. Shift=            0.000ft
Design   : E=        7628435.189ft N=       704938.580ft
          Elev.=            32.673ft
         sH=             32.661ft dH=            0.012ft
         hr=             7.000ft
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Point          : 9526, Ht. Shift=             0.000ft
Design         : E=        7628472.335ft N=        704905.110ft
                 Elev.=             32.609ft
                sH=              32.606ft dH=            0.003ft
                hr=              7.000ft

Point          : 9531, Ht. Shift=             0.000ft
Design         : E=        7628509.480ft N=        704871.640ft
                 Elev.=             32.542ft
                sH=              32.566ft dH=           -0.024ft
                hr=              7.000ft

Point          : 9536, Ht. Shift=             0.000ft
Design         : E=        7628546.625ft N=        704838.170ft
                 Elev.=             32.475ft
                sH=              32.483ft dH=           -0.008ft
                hr=              7.000ft

Point          : 9541, Ht. Shift=             0.000ft
Design         : E=        7628583.770ft N=        704804.700ft
                 Elev.=             32.408ft
                sH=              32.409ft dH=           -0.001ft
                hr=              7.000ft

Point          : 9546, Ht. Shift=             0.000ft
Design         : E=        7628620.915ft N=        704771.229ft
                 Elev.=             32.342ft
                sH=              32.273ft dH=            0.069ft
                hr=              7.000ft

Point          : 9551, Ht. Shift=             0.000ft
Design         : E=        7628658.060ft N=        704737.759ft
                 Elev.=             32.126ft
                sH=              31.977ft dH=            0.149ft
                hr=              7.000ft

Point          : 9556, Ht. Shift=             0.000ft
Design         : E=        7628695.205ft N=        704704.289ft
                 Elev.=             31.493ft
                sH=              31.416ft dH=            0.077ft
                hr=              7.000ft

Point          : 9561, Ht. Shift=             0.000ft
Design         : E=        7628732.350ft N=        704670.819ft
                 Elev.=             30.482ft
                sH=              30.497ft dH=           -0.015ft
                hr=              7.000ft

Point          : 10486, Ht. Shift=             0.000ft
Design         : E=        7628698.880ft N=        704633.674ft
                 Elev.=             30.356ft
                sH=              30.381ft dH=           -0.025ft
                hr=              7.000ft

Point          : 10481, Ht. Shift=             0.000ft
Design         : E=        7628661.735ft N=        704667.144ft
                 Elev.=             30.832ft
                sH=              30.840ft dH=           -0.008ft
                hr=              7.000ft

Point          : 10476, Ht. Shift=             0.000ft
Design         : E=        7628624.590ft N=        704700.614ft
                 Elev.=             31.159ft
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                sH=            31.169ft dH=          -0.010ft
                hr=            7.000ft

Point           : 10471, Ht. Shift=         0.000ft
Design          : E=     7628587.445ft N=    704734.084ft
                  Elev.=          31.487ft
                sH=            31.393ft dH=           0.094ft
                hr=            7.000ft

Point           : 10466, Ht. Shift=         0.000ft
Design          : E=     7628550.300ft N=    704767.554ft
                  Elev.=          31.825ft
                sH=            31.802ft dH=           0.023ft
                hr=            7.000ft

Point           : 10461, Ht. Shift=         0.000ft
Design          : E=     7628513.155ft N=    704801.025ft
                  Elev.=          32.162ft
                sH=            32.133ft dH=           0.029ft
                hr=            7.000ft

Point           : 10456, Ht. Shift=         0.000ft
Design          : E=     7628476.010ft N=    704834.495ft
                  Elev.=          32.501ft
                sH=            32.524ft dH=          -0.023ft
                hr=            7.000ft

Point           : 10451, Ht. Shift=         0.000ft
Design          : E=     7628438.864ft N=    704867.965ft
                  Elev.=          32.825ft
                sH=            32.664ft dH=           0.161ft
                hr=            7.000ft

Point           : 10446, Ht. Shift=         0.000ft
Design          : E=     7628401.719ft N=    704901.435ft
                  Elev.=          33.152ft
                sH=            33.112ft dH=           0.040ft
                hr=            7.000ft

Point           : 11343, Ht. Shift=         0.000ft
Design          : E=     7628368.249ft N=    704864.290ft
                  Elev.=          32.196ft
                sH=            32.150ft dH=           0.046ft
                hr=            7.000ft

Point           : 11348, Ht. Shift=         0.000ft
Design          : E=     7628405.394ft N=    704830.820ft
                  Elev.=          31.855ft
                sH=            31.821ft dH=           0.034ft
                hr=            7.000ft

Point           : 11353, Ht. Shift=         0.000ft
Design          : E=     7628442.540ft N=    704797.349ft
                  Elev.=          31.517ft
                sH=            31.496ft dH=           0.021ft
                hr=            7.000ft

Point           : 11358, Ht. Shift=         0.000ft
Design          : E=     7628479.685ft N=    704763.879ft
                  Elev.=          31.192ft
                sH=            31.239ft dH=          -0.047ft
                hr=            7.000ft
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Point      : 11363, Ht. Shift=              0.000ft
Design     : E=        7628516.830ft N=       704730.409ft
             Elev.=             30.864ft
            sH=            30.921ft dH=          -0.057ft
            hr=            7.000ft

Point      : 11368, Ht. Shift=              0.000ft
Design     : E=        7628553.975ft N=       704696.939ft
             Elev.=             30.537ft
            sH=            30.413ft dH=           0.124ft
            hr=            7.000ft

Point      : 11373, Ht. Shift=              0.000ft
Design     : E=        7628591.120ft N=       704663.469ft
             Elev.=             30.316ft
            sH=            30.480ft dH=          -0.164ft
            hr=            7.000ft

Point      : 13680, Ht. Shift=              0.000ft
Design     : E=        7628433.949ft N=       704895.559ft
             Elev.=             33.293ft
            sH=            33.320ft dH=          -0.027ft
            hr=            7.000ft

Point      : 13679, Ht. Shift=              0.000ft
Design     : E=        7628598.946ft N=       704782.616ft
             Elev.=             32.500ft
            sH=            32.388ft dH=           0.112ft
            hr=            7.000ft

Point      : 13678, Ht. Shift=              0.000ft
Design     : E=        7628693.948ft N=       704718.052ft
             Elev.=             31.724ft
            sH=            31.651ft dH=           0.073ft
            hr=            7.000ft

Point      : 13677, Ht. Shift=              0.000ft
Design     : E=        7628710.526ft N=       704706.734ft
             Elev.=             31.297ft
            sH=            31.234ft dH=           0.063ft
            hr=            7.000ft

Point      : 13676, Ht. Shift=              0.000ft
Design     : E=        7628730.283ft N=       704717.858ft
             Elev.=             31.197ft
            sH=            31.199ft dH=          -0.002ft
            hr=            7.000ft

Point      : 13675, Ht. Shift=              0.000ft
Design     : E=        7628768.978ft N=       704739.634ft
             Elev.=             31.000ft
            sH=            30.804ft dH=           0.196ft
            hr=            7.000ft

Point      : 13674, Ht. Shift=              0.000ft
Design     : E=        7628782.592ft N=       704749.934ft
             Elev.=             30.850ft
            sH=            30.623ft dH=           0.227ft
            hr=            7.000ft

Point      : 13673, Ht. Shift=              0.000ft
Design     : E=        7628794.477ft N=       704766.613ft
             Elev.=             30.904ft
```

```
          sH=                30.553ft dH=              0.351ft
          hr=                7.000ft

Point     : 13672, Ht. Shift=                  0.000ft
Design    : E=          7628805.612ft N=       704786.561ft
           Elev.=              31.002ft
          sH=                30.898ft dH=              0.104ft
          hr=                7.000ft

Point     : 13671, Ht. Shift=                  0.000ft
Design    : E=          7628811.820ft N=       704810.782ft
           Elev.=              31.100ft
          sH=                30.778ft dH=              0.322ft
          hr=                7.000ft

Point     : 13670, Ht. Shift=                  0.000ft
Design    : E=          7628811.734ft N=       704817.294ft
           Elev.=              31.129ft
          sH=                30.770ft dH=              0.359ft
          hr=                7.000ft

Point     : 13669, Ht. Shift=                  0.000ft
Design    : E=          7628805.755ft N=       704834.090ft
           Elev.=              31.286ft
          sH=                31.191ft dH=              0.095ft
          hr=                7.000ft

Point     : 13668, Ht. Shift=                  0.000ft
Design    : E=          7628793.573ft N=       704855.773ft
           Elev.=              31.507ft
          sH=                31.490ft dH=              0.017ft
          hr=                7.000ft

Point     : 13667, Ht. Shift=                  0.000ft
Design    : E=          7628781.767ft N=       704867.068ft
           Elev.=              31.589ft
          sH=                31.521ft dH=              0.068ft
          hr=                7.000ft

Point     : 13666, Ht. Shift=                  0.000ft
Design    : E=          7628770.831ft N=       704876.167ft
           Elev.=              31.672ft
          sH=                31.486ft dH=              0.186ft
          hr=                7.000ft

Point     : 13665, Ht. Shift=                  0.000ft
Design    : E=          7628684.889ft N=       704941.773ft
           Elev.=              31.974ft
          sH=                31.887ft dH=              0.087ft
          hr=                7.000ft

Point     : 13664, Ht. Shift=                  0.000ft
Design    : E=          7628631.924ft N=       704984.051ft
           Elev.=              32.137ft
          sH=                32.120ft dH=              0.017ft
          hr=                7.000ft

Point     : 13663, Ht. Shift=                  0.000ft
Design    : E=          7628569.022ft N=       705032.924ft
           Elev.=              32.341ft
          sH=                32.366ft dH=             -0.025ft
          hr=                7.000ft
```

REC'D 6/28/05

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: rows 12, 13, 14, 15, 16.

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [x] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

It has been understood between Wilder and E&E that inside the barrier wall, compaction testing is required at locations where fill has been placed above 4". The attached chart shades areas in which compaction testing is required.

Grid numbers AA-12 thru EE-12 have been approved based on compactive effort. Upon approval, this will complete the required/agreed upon areas.

[signature]	6/28/05		
Wilder Representative	Date	Owner Representative	Date

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	5
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/27/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Monday
WEATHER	Showers	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-223, 05-224, & 05-225)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade	*FSG						95% Required
1	Grid U-11	FSG	05-224	116.6	9.3	118.9	100+	30% Oversize
2	Grid V-11	FSG	05-224	110.9	8.0	119.1	100+	35% Oversize
3	Grid W-11	FSG	05-224	114.3	12.8	114.5	100+	25% Oversize
4	Grid X-11	FSG	05-224	118.9	11.2	118.9	100	35% Oversize
5	Grid Y-11	FSG	05-225	119.4	11.6	111.3	93.2	20% Oversize
6	Grid Z-11	FSG	05-225	125.2	7.7	115.4	92.2	34% Oversize
7	Grid S-12	FSG	05-224	116.8	10.9	119.1	100+	30% Oversize
8	Grid T-12	FSG	05-225	117.5	9.7	112.2	95.5	15% Oversize
9	Grid U-12	FSG	05-225	123.5	7.9	124.3	100+	30% Oversize
10	Grid V-12	FSG	05-225	121.4	8.3	118.9	97.9	25% Oversize
11	Grid W-12	FSG	05-223	114.4	13.9	115.2	100+	20% Oversize
12	Grid X-12	FSG	05-223	112.3	9.7	112.4	100+	15% Oversize
13	Grid Y-12	FSG	05-223	116.5	13.9	115.4	99.1	25% Oversize
14	Grid Z-12	FSG	05-223	118.7	11.5	116.2	97.9	30% Oversize
15	Grid Y-13	FSG	05-223	119.7	12.7	109.3	91.3	32% Oversize

*FSG = Finished Subgrade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested to provide in-place nuclear density testing for the reworked and recompacted subgrade within the impermeable cap area. Test locations and results are listed above. To the best of NTI's knowledge, all tests provided today met the project requirements of a minimum of 95% of maximum dry density as determined by ASTM D698 and ASTM D4718 except tests 5, 6, 15 through 20, 23, and 24. Jacob Zacharda, Wilder Construction, and Ecology & Environment, Inc., representatives were informed of all test results and observations. Locations are to be verified by Wilder Construction GPS. In addition a sample of leveling sand was obtained for maximum dry density verification.

FIELD REPRESENTATIVE: Adam Koslofsky
Jon L. Sparks

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PERMIT NO.	
PAGE 2	OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	5
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/27/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Monday
WEATHER	Showers	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-223, 05-224, & 05-225)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
								95% Required
16	Grid Z-13	FSG	05-223	118.7	13.9	107.6	90.6	30% Oversize
17	Grid AA-13	FSG	05-223	116.5	11.5	105.9	90.9	25% Oversize
18	Grid BB-13	FSG	05-223	116.5	12.7	109.6	94.1	25% Oversize
19	Grid CC-13	FSG	05-223	119.7	10.1	112.0	93.6	32% Oversize
20	Grid DD-13	FSG	05-223	116.5	13.5	106.5	91.5	25% Oversize
21	Grid AA-14	FSG	05-223	118.7	12.5	113.5	95.6	30% Oversize
22	Grid BB-14	FSG	05-223	116.5	8.5	111.5	95.7	35% Oversize
23	Grid CC-14	FSG	05-223	114.4	14.8	104.6	91.5	20% Oversize
24	Grid DD-14	FSG	05-223	116.5	16.9	110.6	94.9	25% Oversize
25	Grid EE-14	FSG	05-223	114.4	12.0	111.7	97.7	20% Oversize

*FSG = Finished Subgrade

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

REC'D 6/29/05

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

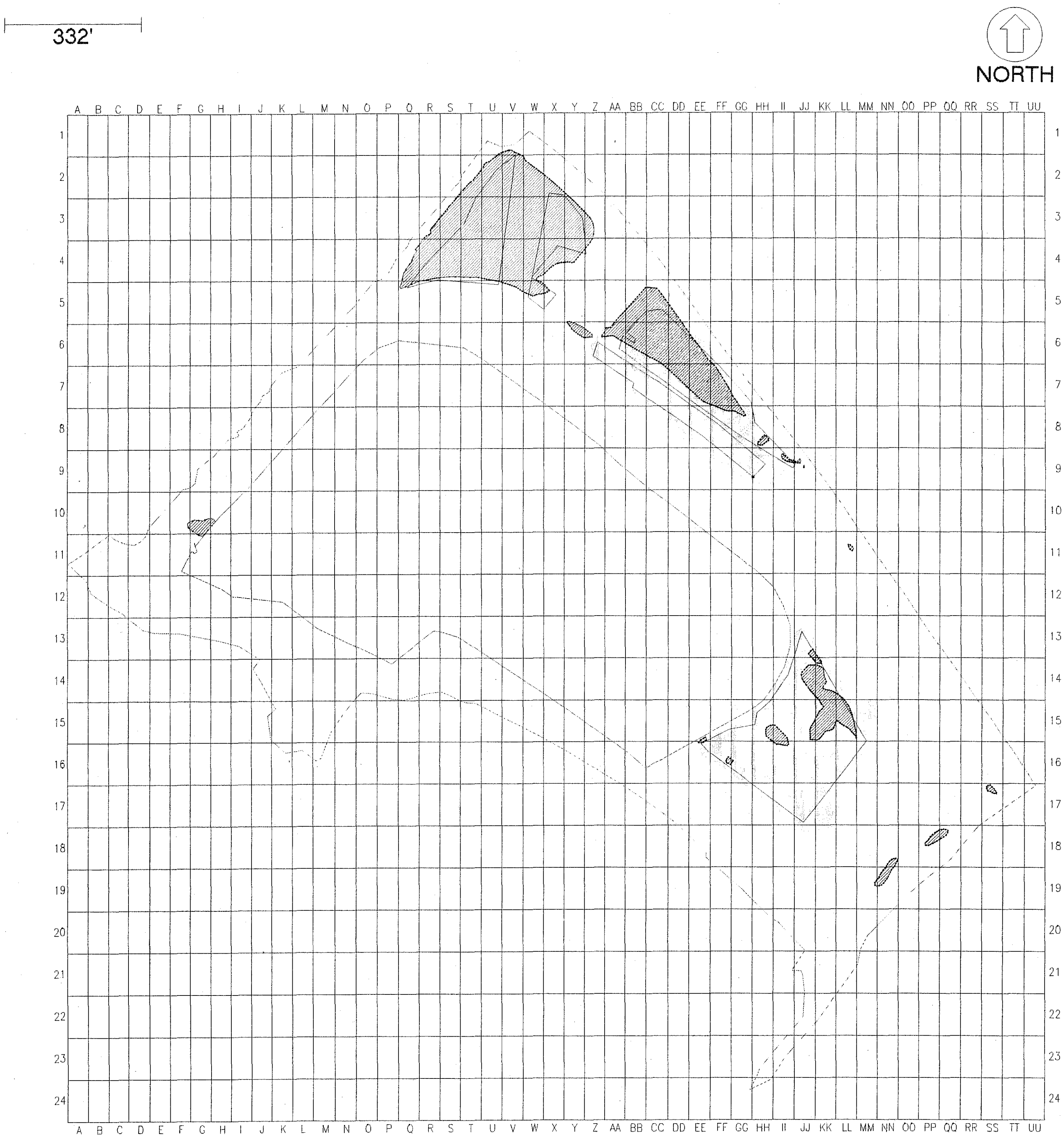
Wilder hereby submits the following layer for approval:

Grid Identification Number: See attached chart

- [x] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:
The enclosed field report is a brief summary of the test results. All areas that were tested passed.

[signature]	6/29/05		
Wilder Representative	Date	Owner Representative	Date



Comment :

Project : 8in fill locations SG

C:\M3005 McCormick and Baxter Project\GPS\Work in Progress\Testi...\8in fill locations SG.ln3 06/30/2005

NGI Tests (Nuclear Density) 6/29/05

Grid	DD	Moist.	Oversize %+4	Corrected max dens	% comp	Sample comp.
JJ 14	98.8	7.5	15%	112.3	88.0 F	7
KK14	104.5	10.0	15%	112.3	93.1 F	7
JJ 14	100.5	4.9	30%	118.7	84.6	7
KK14	102.9	9.0	35%	121.1	85.0	7
LL15	82.8	12.1	5%	108.4	76.4	7
KK15	87.2	12.1	10%	110.3	79.1	7
BB5	114.4	4.2	15%	107.4	100+ F	3
BB6	95.6	6.3	25%	113.8	84.0	3
CC 6	85.0	12.8	5%	105.4	80.6	3
CC5	97.0	~~4.0~~4.9	25%	113.8	85.2	3
DD 6	86.9	14.7	5%	105.4	82.4	3
EE6	87.8	13.3	5%	105.4	83.3	3
EE 7	87.3	14.4	5%	105.4	82.8	3
DD 7	85.6	14.8	5%	105.4	81.2	3
AA 6	AA 6	93.4	20%	111.6	83.7	3

All tests compaction requirement 75-85%

Offical NW Geotech has been submitted at later date

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070

FACSIMILE TRANSMITTAL

TO:	Jacob Zacharda	FROM: Tom Ginsbach
COMPANY:	Wilder Construction Company	
FAX:	503-289-4145	**NORTHWEST TESTING, INC.** (503) 682-1880 PHONE (503) 682-2753 FAX
PHONE:	425-754-6640	

DATE AND TIME SENT

07/01/05 3:17 PM

NUMBER OF PAGES INCLUDING TRANSMITTAL

4

SPECIAL INSTRUCTIONS

Project No. 1604.1.1

McCormick & Baxter Upland CAP

Daily Report of Inspection Activities No. 8

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 3

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	8
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/30/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-228); Ross Island Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade Soil Cap Area	*FSG						75% to 85% Required
1	Grid U-2	FSG	05-228	105.4	11.1	84.2	79.9	5% Oversize
2	Grid U-3	FSG	05-228	105.4	15.7	86.2	81.8	5% Oversize
3	Grid T-3	FSG	05-228	107.4	15.7	87.2	81.2	10% Oversize
4	Grid T-2	FSG	05-228	107.4	12.7	89.0	82.9	10% Oversize
5	Grid S-3	FSG	05-228	113.8	9.2	94.6	83.1	25% Oversize
6	Grid S-4	FSG	05-228	111.6	6.7	92.0	82.4	20% Oversize
7	Grid T-4	FSG	05-228	107.4	10.1	87.8	81.8	10% Oversize
8	Grid R-4	FSG	05-228	113.8	9.1	95.5	83.9	25% Oversize
9	Grid Q-4	FSG	05-228	109.4	9.7	89.9	82.2	15% Oversize
10	Grid W-2	FSG	05-228	105.4	11.1	84.2	79.9	15% Oversize
11	Grid V-2	FSG	05-228	111.6	12.3	91.6	82.1	20% Oversize
12	Grid V-3	FSG	05-228	105.4	15.1	80.9	76.8	5% Oversize
13	Grid W-3	FSG	05-228	111.6	10.4	92.9	83.2	20% Oversize
14	Grid U-4	FSG	05-228	113.8	7.2	93.2	81.9	25% Oversize
15	Grid V-4	FSG	05-228	113.8	11.7	95.9	84.3	25% Oversize

*FSG = Finished Subgrade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested to provide in-place nuclear density testing for the re-worked and re-compacted subgrade in the soil cap area and the leveling sand within the impermeable cap area. Test locations and results are listed above. Locations were verified by Wilder Construction, GPS locator. Aggregate oversize corrections were provided in the field for each test location within the soil cap area. To the best of NGI's knowledge, all tests provided today in the soil cap area met the project requirements of 75% to 85% of the maximum dry density as determined by ASTM D698 and ASTM D4718. In addition, tests provided on the leveling sand within the impermeable cap area met the project requirements of a minimum of 92% of the maximum dry density as determined by ASTM D698 and ASTM D4718, except test No.'s 27, 49, and 51 to 53. NGI informed Jacob Zacharda, Wilder Construction, and the Ecology and Environment, Inc. representative of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS* Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 3

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	8
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/30/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-228); Ross Island Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade Soil Cap Area	*FSG						75% to 85% Required
16	Grid W-4	FSG	05-228	113.8	13.9	95.5	83.9	25% Oversize
17	Grid X-4	FSG	05-228	113.8	11.5	93.6	82.2	25% Oversize
18	Grid Y-4	FSG	05-228	107.4	15.2	87.2	81.2	10% Oversize
19	Grid Y-3	FSG	05-228	111.6	14.6	92.7	83.1	20% Oversize
20	Grid X-3	FSG	05-228	116.1	10.9	97.8	84.2	30% Oversize
21	Grid X-2	FSG	05-228	113.8	9.4	95.3	83.7	25% Oversize
22	Grid FF-7	FSG	05-228	105.4	12.3	85.6	81.2	5% Oversize
23	Grid CC-5	FSG	05-228	111.6	11.1	92.8	83.2	20% Oversize
	Leveling Sand Impermeable Cap Section	**TLS						92% Required
24	Grid Q-6	TLS	05-243	98.5	5.7	92.6	94.0	
25	Grid R-6	TLS	05-243	98.5	6.2	92.4	93.8	
26	Grid P-6	TLS	05-243	98.5	5.9	92.0	93.4	
27	Grid O-6	TLS	05-243	98.5	5.2	85.4	86.7	
28	Grid Q-7	TLS	05-243	98.5	11.7	98.9	100+	
29	Grid P-7	TLS	05-243	98.5	10.1	100.2	100+	
30	Grid R-7	TLS	05-243	98.5	9.7	101.6	100+	
31	Grid R-8	TLS	05-243	98.5	6.0	96.2	97.7	
32	Grid Q-8	TLS	05-243	98.5	9.1	95.0	96.4	
33	Grid P-8	TLS	05-243	98.5	7.7	90.7	92.1	
34	Grid O-8	TLS	05-243	98.5	8.6	95.3	96.8	
35	Grid O-7	TLS	05-243	98.5	10.7	93.7	95.1	
36	Grid R-9	TLS	05-243	98.5	6.5	92.0	93.4	
37	Grid Q-9	TLS	05-243	98.5	8.1	92.8	94.2	
38	Grid P-9	TLS	05-243	98.5	4.3	93.6	95.0	
39	Grid O-9	TLS	05-243	98.5	9.9	95.2	96.6	
40	Grid N-9	TLS	05-243	98.5	9.0	91.8	93.2	
41	Grid N-8	TLS	05-243	98.5	10.0	97.2	98.7	

*FSG = Finished Subgrade
**TLS = Top of Leveling Sand

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS* Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	3 OF 3

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	8
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/30/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-228); Ross Island Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Leveling Sand Impermeable Cap Section	**TLS						92% Required
42	Grid M-9	TLS	05-243	98.5	5.8	92.6	94.0	
43	Grid M-8	TLS	05-243	98.5	5.9	91.0	92.4	
44	Grid L-9	TLS	05-243	98.5	6.7	91.6	93.0	
45	Grid K-9	TLS	05-243	98.5	7.1	91.7	93.1	
46	Grid R-10	TLS	05-243	98.5	5.1	94.4	95.8	
47	Grid Q-10	TLS	05-243	98.5	5.5	95.2	96.6	
48	Grid P-10	TLS	05-243	98.5	7.3	97.1	98.6	
49	Grid N-10	TLS	05-243	98.5	5.9	88.6	89.9	
50	Grid M-10	TLS	05-243	98.5	5.1	91.6	93.0	
51	Grid L-10	TLS	05-243	98.5	5.7	88.5	89.8	
52	Grid K-10	TLS	05-243	98.5	6.3	84.2	85.5	
53	Grid J-10	TLS	05-243	98.5	5.8	86.6	87.9	

*FSG = Finished Subgrade
**TLS = Top of Leveling Sand

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS* Effective Date: 02/05/04

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070

FACSIMILE TRANSMITTAL

TO:	Jacob Zacharda	FROM:	Tom Ginsbach
COMPANY:	Wilder Construction Company		
FAX:	503-289-4145		**NORTHWEST TESTING, INC.** (503) 682-1880 PHONE (503) 682-2753 FAX
PHONE:	425-754-6640		

DATE AND TIME SENT

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NUMBER OF PAGES INCLUDING TRANSMITTAL

4

SPECIAL INSTRUCTIONS

Project No. 1604.1.1

McCormick & Baxter Upland CAP

Daily Report of Inspection Activities No. 6 and 7

Reissuing the attached reports due to revisions. Please disregard previous reports that may have been faxed to you (Report No.'s 6 and 7).

Thank you.

Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	6
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/28/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER	Overcast, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-228, 05-224, & 05-225)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade Impermeable Cap Area	*FSG						95% Required
1	Grid EE-12	FSG	05-225	115.6	17.2	101.9	88.1	*Retest of Test No. 17, Report No. 4 (06/25/05),* 10% Oversize
2	Grid DD-13	FSG	05-223	121.1	12.9	119.7	98.8	35% Oversize
3	Grid CC-13	FSG	05-223	112.3	15.3	108.7	96.8	15% Oversize
4	Grid BB-13	FSG	05-223	112.3	13.5	107.1	95.4	15% Oversize
5	Grid CC-14	FSG	05-223	116.1	17.4	110.6	95.3	24% Oversize
6	Grid AA-13	FSG	05-223	114.4	10.1	112.8	98.6	20% Oversize
7	Grid BB-12	FSG	05-225	123.5	13.5	119.2	96.5	30% Oversize
8	Grid CC-12	FSG	05-225	115.6	15.1	105.8	91.5	*Retest of Test No. 15, Report No. 4 (6/25/05),* 10% Oversize
9	Grid Z-13	FSG	05-222	118.7	10.4	117.1	98.7	30% Oversize
10	Grid Y-13	FSG	05-225	118.7	10.2	117.7	99.2	20% Oversize
11	Grid Y-11	FSG	05-225	121.4	10.5	117.4	96.7	25% Oversize
12	Grid Z-11	FSG	05-223	117.5	7.3	114.7	97.6	15% Oversize

*FSG = Finished Subgrade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested to provide in-place nuclear density testing for the re-worked and re-compacted subgrade within the impermeable cap and soil cap areas. Test locations and results are listed above. Locations were verified by Wilder Construction, GPS locator. Aggregate oversize corrections were provided in the field for each test locations. To the best of NGI's knowledge, all tests provided today in the impermeable cap area, with the exception of test No.'s 1, 8, 13, 14, and 15, met the project requirements of a minimum of 95% of maximum dry density as determined by ASTM D698 and ASTM D4718. Test No.'s 13, 14, and 15 were field accepted by Ecology and Environment, Inc. and no re-tests are required. The tests taken within the soil cap area (tests 16 to 24) were all outside of the required range of compaction (75-85%). NGI informed Jacob Zacharda, Wilder Construction, and the Ecology and Environment, Inc. representative of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	6
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/28/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER	Overcast, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-228, 05-224, & 05-225)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade Impermeable Cap Area	*FSG						95% Required
13	Grid CC-12	FSG	05-225	117.5	14.4	108.9	92.7	*Retest of Test No. 8,* 15% Oversize Accepted by Ecology and Environment, Inc.
14	Grid DD-12	FSG	05-225	115.6	17.4	104.0	90.0	*Retest of Test No. 16, Report No. 4 (06/25/05),* 10% Oversize Accepted by Ecology and Environment, Inc.
15	Grid EE-12	FSG	05-225	117.5	17.2	106.3	90.5	*Retest of Test No. 1,* 15% Oversize Accepted by Ecology and Environment, Inc.
	Re-Worked, Re-Compacted Subgrade Soil Cap Area							75-85% Required
16	Grid T-2	FSG	05-228	107.4	13.9	100.1	93.2	10% Oversize
17	Grid U-2	FSG	05-228	105.4	13.8	89.8	85.2	5% Oversize
18	Grid V-2	FSG	05-228	118.5	13.6	110.8	93.5	35% Oversize
19	Grid W-2	FSG	05-228	116.1	7.9	113.8	98.0	30% Oversize
20	Grid W-3	FSG	05-228	113.8	5.8	113.9	100+	25% Oversize
21	Grid V-3	FSG	05-228	116.1	8.3	117.9	100+	30% Oversize
22	Grid CC-6	FSG	05-228	113.8	7.5	108.2	95.1	25% Oversize
23	Grid CC-5	FSG	05-228	105.4	4.9	103.7	98.4	5% Oversize
24	Grid DD-6	FSG	05-228	105.4	7.3	108.4	100+	5% Oversize

*FSG = Finished Subgrade

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	7
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	06/29/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Wednesday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Site Soil (05-223 and 05-228)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Re-Worked, Re-Compacted Subgrade Soil Cap Area	*FSG						75% to 85% Required
1	Grid JJ-14	FSG	05-223	112.3	7.5	98.8	88.0	15% Oversize
2	Grid KK-14	FSG	05-223	112.3	10.0	104.5	93.1	15% Oversize
3	Grid JJ-14	FSG	05-223	118.7	4.9	100.5	84.7	*Retest of Test No. 1,* 30% Oversize
4	Grid KK-14	FSG	05-223	121.1	9.0	102.9	85.0	*Retest of Test No. 2,* 35% Oversize
5	Grid LL-15	FSG	05-223	108.4	12.1	82.8	76.4	5% Oversize
6	Grid KK-15	FSG	05-223	110.3	12.1	87.2	79.1	10% Oversize
7	Grid BB-5	FSG	05-228	109.4	4.2	114.4	100+	15% Oversize
8	Grid BB-6	FSG	05-228	113.8	6.3	95.6	84.0	25% Oversize
9	Grid CC-6	FSG	05-228	105.4	12.8	85.0	80.6	5% Oversize
10	Grid CC-5	FSG	05-228	113.8	4.9	97.0	85.2	*Retest of Test No. 23, Report No. 6 (06/28/05),* 25% Oversize
11	Grid DD-6	FSG	05-228	105.4	14.7	86.9	82.4	5% Oversize
12	Grid EE-6	FSG	05-228	105.4	13.3	87.8	83.3	5% Oversize
13	Grid EE-7	FSG	05-228	105.4	14.4	87.3	82.8	5% Oversize
14	Grid DD-7	FSG	05-228	105.4	14.8	85.6	81.2	5% Oversize
15	Grid AA-6	FSG	05-228	111.6	12.7	93.4	83.7	20% Oversize

*FSG = Finished Subgrade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested to provide in-place nuclear density testing for the re-worked and re-compacted subgrade in the soil cap area. Test locations and results are listed above. Locations were verified by Wilder Construction, GPS locator. Aggregate oversize corrections were provided in the field for each test location. To the best of NGI's knowledge, all tests provided today, with the exception tests 1, 2, 7, and 10, met the project requirements of 75% to 85% of maximum dry density as determined by ASTM D698 and ASTM D4718. NGI informed Jacob Zacharda, Wilder Construction, and the Ecology and Environment, Inc. representative of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

- [x] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [x] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

Enclosed are compaction reports for both the soil cap area and the sand leveling layer. The enclosed results are field notes from the testing agency. The official results will be sent shortly.

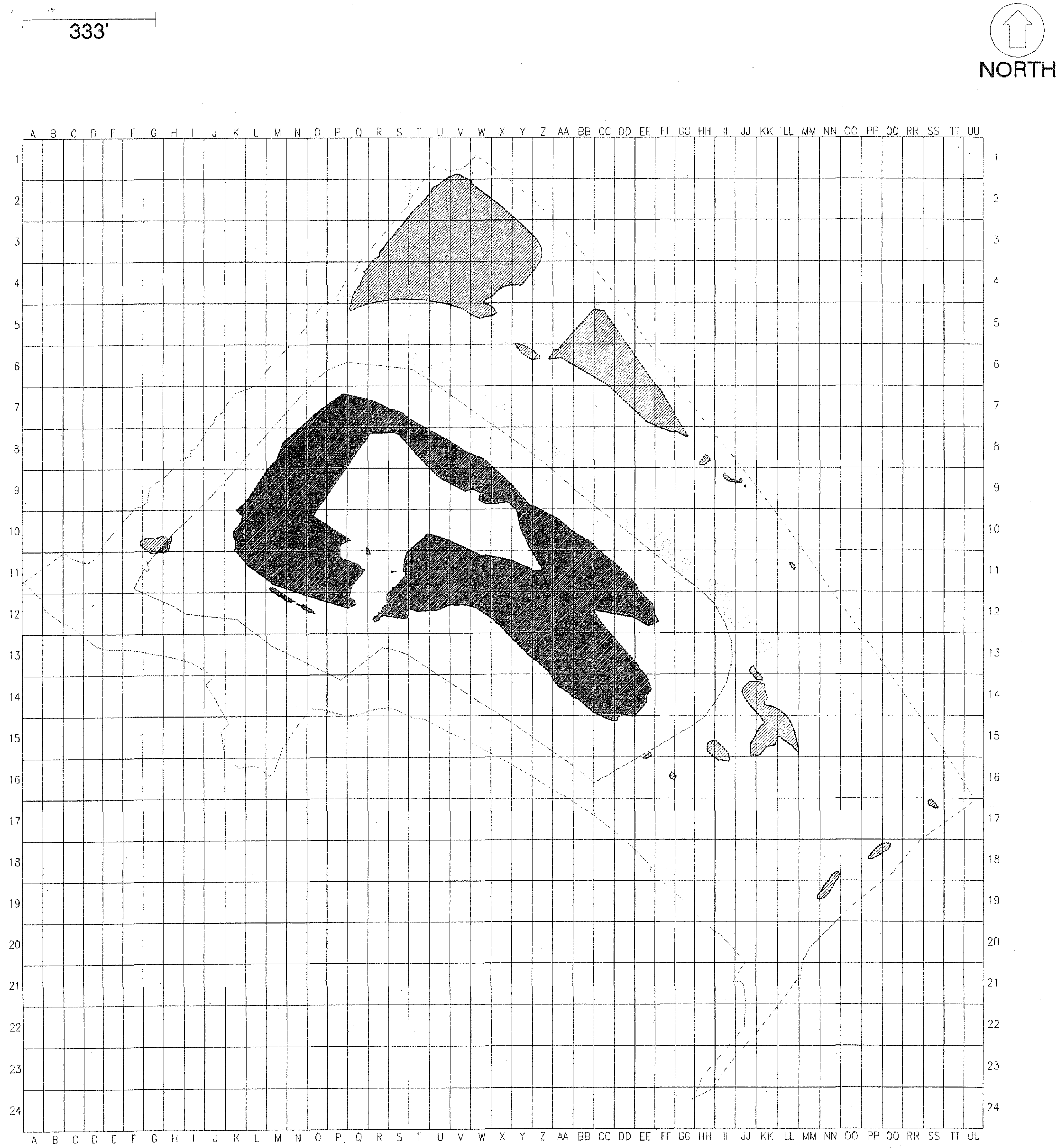
[signature]	7/1/05		
Wilder Representative	Date	Owner Representative	Date

Reworked recompacted
Soil Cap Density Tests
6/30/05 75-85%

Grid	% Compaction
U2	79.9
U3	105.4
T3	81.2
T2	82.9
S3	83.1
S4	82.4
T4	81.8
R4	83.9
Q4	82.2
W2	82.7
V2	~~[illegible]~~ 82.1
V3	76.8
W3	83.2
U4	81.9
V4	84.3
W4	83.9
X4	82.2
Y4	81.2
Y3	83.1
X3	84.2
X2	83.7
FF 7	81.2
CC5	83.2

75-85%

Offical report has been submitted



Comment :

Project : Master Test Grid for SG

C:\M3005 McCormick and Baxter Project\Quality Control.Quality ...\Master Test Grid for SG.tp3 07/01/2005

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

- [x] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [x] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

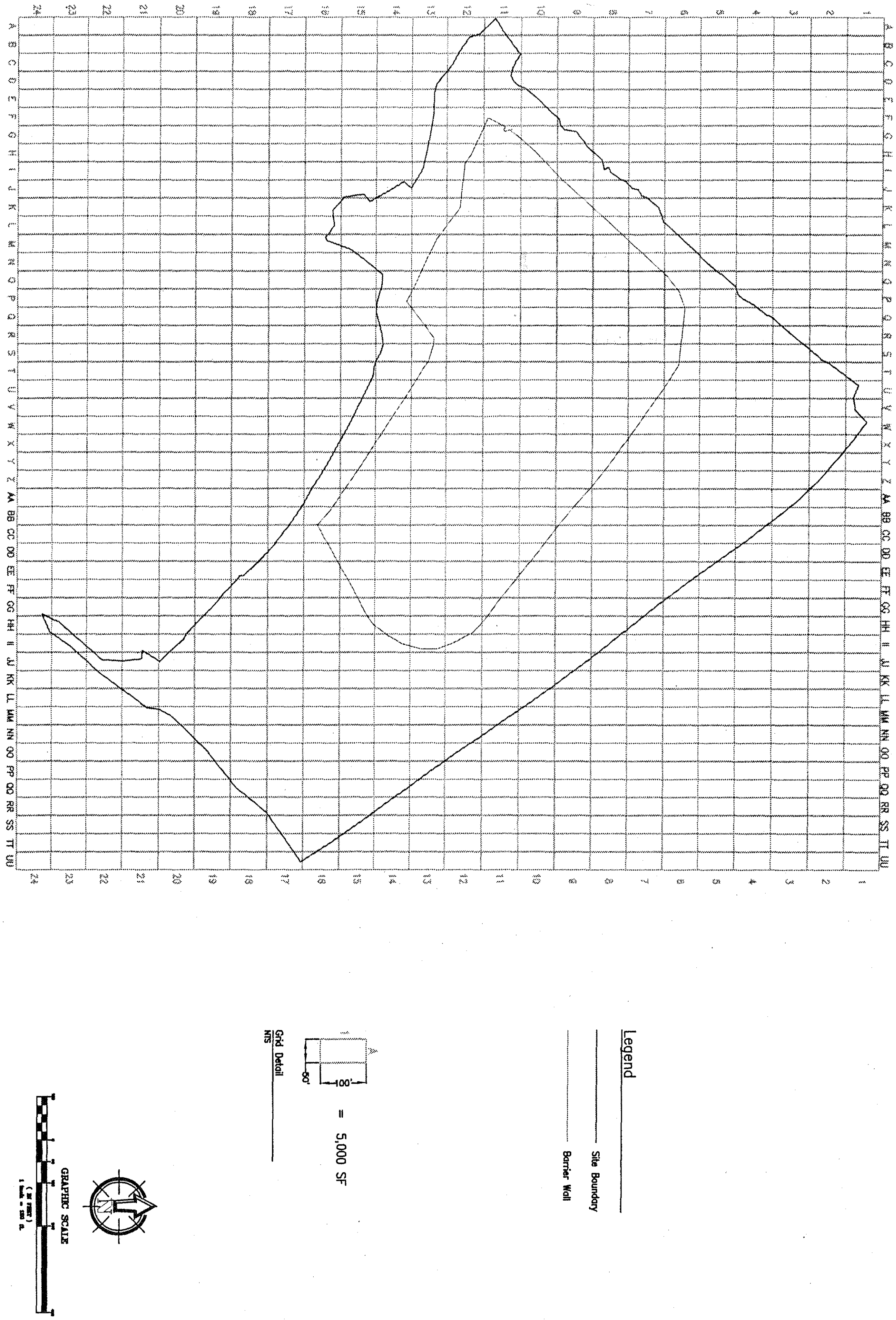
Enclosed are compaction reports for both the soil cap area and the sand leveling layer. The enclosed results are field notes from the testing agency. The official results will be sent shortly.

[signature]	7/1/05		
Wilder Representative	Date	Owner Representative	Date

Leveling Sand Density Tests
6/30/05 impermeable cap
92% or greater

Grid	% Compaction
S6 ~~Y3~~	95
R6	93.8
P6	93.4
O6	86.7
Q7	100+
P7	100+
R7	100+
R8	97.7
~~9~~ Q8	96.5
P8	92.1
O8	96.8
O7	95.1
R9	93.4
Q9	94.2
P9	95.0
O9	96.6
N9	93.2
N8	98.6
M9	94.0
M8	92.3
L9	93.0
K9	93.1
R10	95.8
Q10	96.7
P10	98.6
O10	89.9
N10	93.0
M10	89.9
L10	85.4
K10	87.9

Offical NW Geotech report submitted at later date



McCormick and Baxter Creosoting Co.
Site Grid

DIRTLOGIC LLC

received
7/6/05 @ 530 pm

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

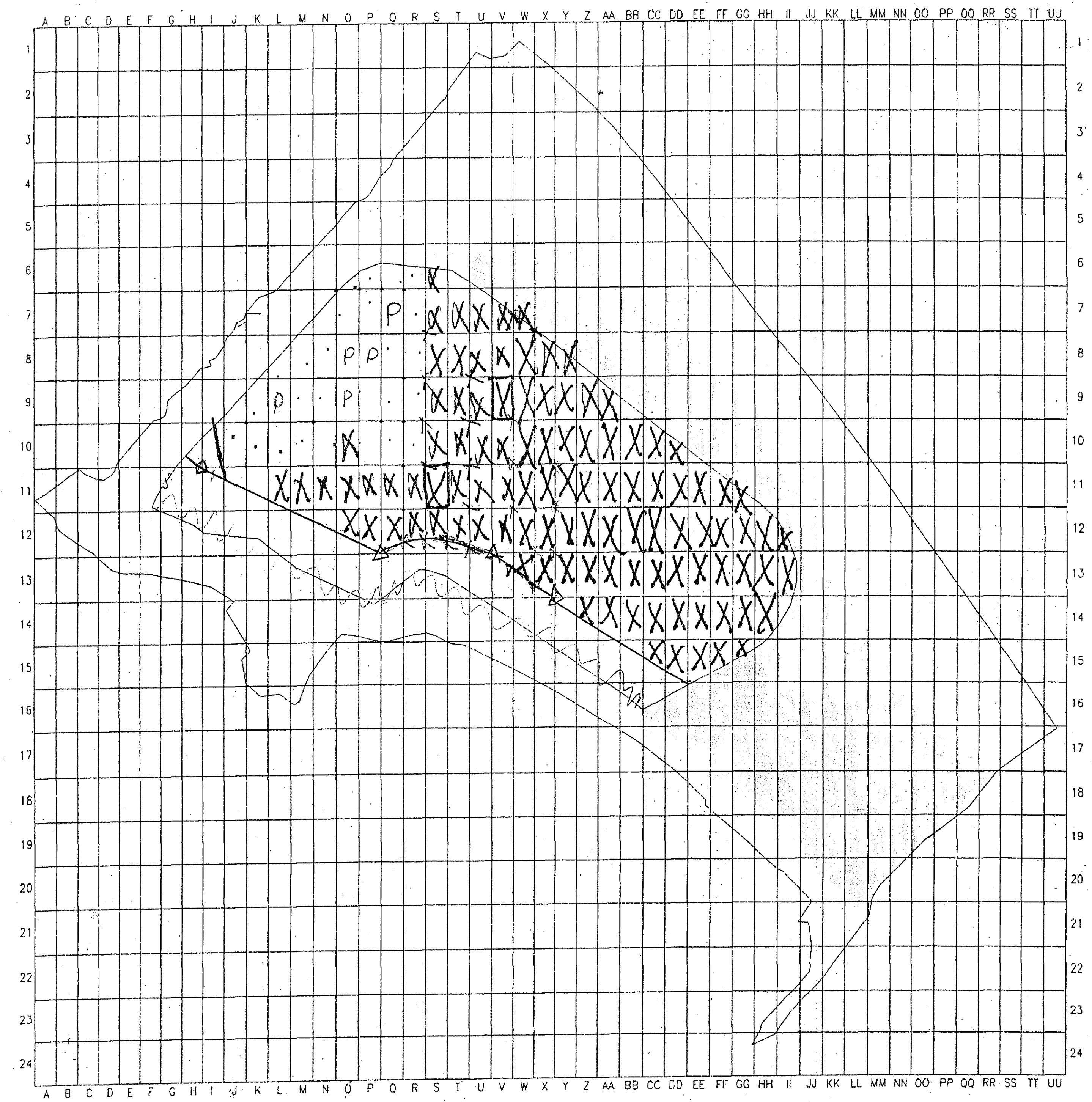
- [x] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [x] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:
Attached are the compaction results for the sand leveling area. This completes the entire surface for the impermeable cap area.

[signature]	7/6/05		
Wilder Representative	Date	Owner Representative	Date

333'

NORTH



Comment :

Project : Project1

07/01/2005

Northwest Geotech, Inc.

8120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	9
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	07/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Friday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Leveling Sand Impermeable Cap Area	*TLS						92% Required
1	Grid L-11	TLS	05-243	98.5	3.9	94.1	95.5	
2	Grid M-11	TLS	05-243	98.5	6.1	91.5	92.9	
3	Grid M-11	TLS	05-243	98.5	5.5	93.7	95.1	
4	Grid N-11	TLS	05-243	98.5	5.1	95.6	97.1	
5	Grid O-11	TLS	05-243	98.5	6.0	96.1	97.6	
6	Grid P-11	TLS	05-243	98.5	6.5	97.3	98.8	
7	Grid R-11	TLS	05-243	98.5	5.4	95.0	96.4	
8	Grid R-12	TLS	05-243	98.5	3.5	96.3	97.8	
9	Grid Q-11	TLS	05-243	98.5	6.5	96.0	97.5	
10	Grid T-12	TLS	05-243	98.5	6.0	93.9	95.3	
11	Grid S-12	TLS	05-243	98.5	6.0	92.5	93.9	
12	Grid S-11	TLS	05-243	98.5	5.2	89.9	91.3	
13	Grid T-11	TLS	05-243	98.5	6.8	93.2	94.6	
14	Grid T-10	TLS	05-243	98.5	5.4	96.0	97.5	
15	Grid S-10	TLS	05-243	98.5	5.4	99.5	100+	
16	Grid S-9	TLS	05-243	98.5	6.3	100.4	100+	
17	Grid T-9	TLS	05-243	98.5	6.3	96.4	97.9	
18	Grid O-10	TLS	05-243	98.5	6.9	93.7	95.1	
19	Grid U-12	TLS	05-243	98.5	4.6	92.8	94.2	
20	Grid V-12	TLS	05-243	98.5	5.3	97.8	99.3	

*TLS = Top of Leveling Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing for the leveling sand within the impermeable cap area. Test locations and results are listed above. Locations were verified by Wilder Construction, GPS locator. With the exception of test No.'s 12 and 26, to the best of NGI's knowledge, all tests provided met the project requirements of a minimum of 92% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, by draft report of all test results and observations.

FIELD REPRESENTATIVE: Jon L. Sparks

REVIEWED BY: Tom Ginsbach For JPK

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	9
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	07/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Friday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Leveling Sand Impermeable Cap Area	*TLS						92% Required
21	Grid U-11	TLS	05-243	98.5	5.1	95.7	97.2	
22	Grid V-11	TLS	05-243	98.5	5.7	93.8	95.2	
23	Grid V-10	TLS	05-243	98.5	6.0	91.4	92.8	
24	Grid U-10	TLS	05-243	98.5	5.2	94.1	95.5	
25	Grid U-9	TLS	05-243	98.5	9.0	98.6	100+	
26	Grid V-9	TLS	05-243	98.5	6.4	89.6	91.0	
27	Grid U-8	TLS	05-243	98.5	11.7	103.3	100+	
28	Grid V-8	TLS	05-243	98.5	13.0	103.5	100+	
29	Grid V-7	TLS	05-243	98.5	9.5	101.8	100+	
30	Grid U-7	TLS	05-243	98.5	9.6	106.6	100+	
31	Grid T-7	TLS	05-243	98.5	11.3	101.4	100+	
32	Grid S-7	TLS	05-243	98.5	12.0	98.8	100+	
33	Grid S-6	TLS	05-243	98.5	7.5	99.6	100+	
34	Grid W-7	TLS	05-243	98.5	6.5	95.0	96.4	
35	Grid X-8	TLS	05-243	98.5	8.9	97.1	98.6	
36	Grid Y-8	TLS	05-243	98.5	9.5	97.1	98.6	
37	Grid Z-9	TLS	05-243	98.5	11.1	100.3	100+	

*TLS = Top of Leveling Sand

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DRAFT

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 3

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	7/5/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER	Sunny Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL		VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	~~CORRECTED~~ MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area	TLS	05-243					√ = 2 in. trans 92% ~~95%~~ Required
1	T8						95.3	√
2	S8						94.3	√
3	W8						100+	√
4	W9						98.1	√
5	X9						97.5	
6	Y9						100+	
7	AA9						96.4	
8	Z 10						97.6	
9	AA 10						93.6	
10	BB 10						96.6	√
11	CC 10						99.1	
12	DD 10						95.9	
13	~~Z 11~~ AA 11						94.5	
14	BB ~~AA~~ 11						92.7	
15	CC ~~BB~~ 11						95.3	
16	~~CC 11~~ DD 11						93.7	
17	~~DD 11~~ EE 11						96.1	
18	~~EE 11~~ FF 11						94.3	
19	~~FF 11~~ GG 11						95.4	
20	~~CC 12~~ DD 12						94.1	√
21	~~DD 12~~ EE 12						93.5	
22	~~EE 12~~ FF 12						98.6	
23	~~FF 12~~ GG 12						92.4	
24	~~GG 12~~ HH 12						92.7	
25	~~HH 12~~ II 12						93.7	
26	S 11						97.3	Retest

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

\\MKL\Daily Reports\Project No. 1600-1699\1604-11\1604-11rjp06.doc/mkl

Northwest Geotech, Inc. DRAFT

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 3

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	~~6~~ 7/05/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER		SOURCE AND DESCRIPTION OF FILL MATERIAL		VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	~~CORRECTED~~ MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area	TLS	05-243					92% ~~95%~~ Required
27	K ~~L~~ 10						94.5	Retest
28	V9						92.3	Retest
29	W11						95.9	
30	W10						94.6	
31	X10						97.2	
32	Y10						93.6	
33	X11						95.8	
34	Y11						99.3	
35	Z11						97.4	
36	CC12						96.2	
37	BR12						92.3	
38	J10						93.7	Retest
39	L10						100+	Retest
40	~~N10~~ N10						93.2	Retest
41	W12						95.9	
42	X12						95.0	
43	Y12						95.5	
44	~~92.4~~ Z12						92.4	
45	AA12						100+	
46	W13						95.8	
47	X13						94.1	
48	Y13						97.8	
49	Z13						92.4	
50	AA13						100+	
51	BB13						95.0	
52	CC13						92.9	

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	3 OF 3

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	7/05/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER		SOURCE AND DESCRIPTION OF FILL MATERIAL		VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	~~CORRECTED~~ MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area							92% ~~95%~~ Required √ = 2 in trans
53	DD 13						96.4	
54	EE 13						93.2	
55	FF 13						97.6	√
56	GG 13						94.1	
57	HH 13						94.0	
58	II 13						95.9	
59	Z 14						92.5	
60	AA 14						93.7	
61	BB 14						92.4	
62	CC 14						94.0	
63	DD 14						94.4	
64	EE 14						92.5	
65	FF 14						97.3	
66	GG 14						95.8	
67	HH 14						94.8	

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Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	7/06/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Wednesday
WEATHER		SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	~~CORRECTED~~ MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area	TLS						92% ~~95%~~ Required
1	O 12						93.0	
2	P 12						96.7	
3	Q 12						96.5	
4	CC 15						100+	
5	DD 15						92.6	
6	EE 15						94.8	
7	FF 15						92.6	
8	GG 15						94.7	

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Placement Verification Form
McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

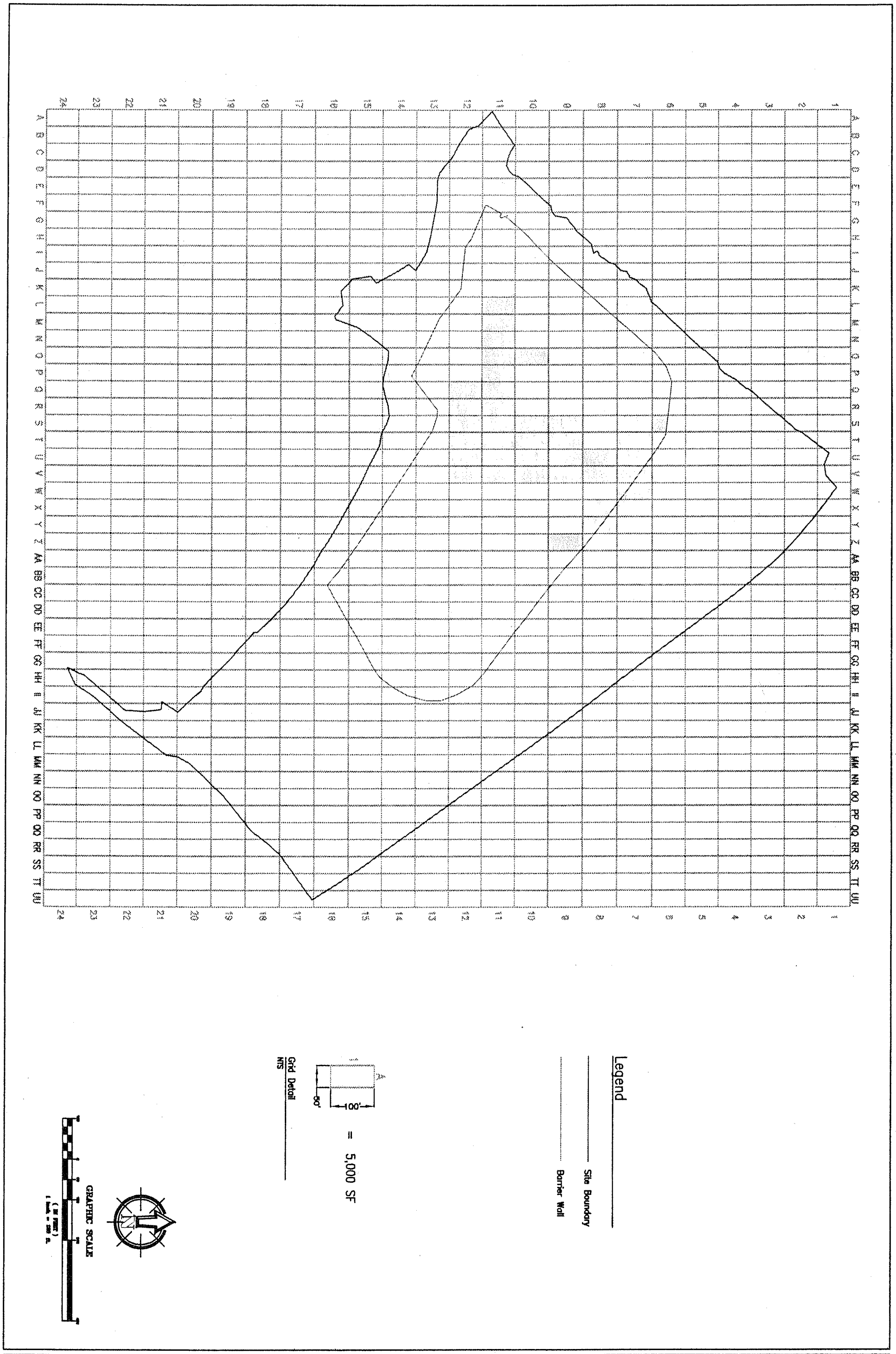
Grid Identification Number: see attached chart (see notes below)

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [x] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:
Enclosed are the results for the compaction testing which was done on 7/1/05.

[signature] 7/5/05

Wilder Representative | Date | Owner Representative | Date



MCCORMICK AND BAXTER CREOSOTING CO.
SITE GRID

DIRTLOGIC LLC

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	7-1-05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Friday
WEATHER	Sunny Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Leveling Sand	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	C~~ORRECTED~~ MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Leveling Sand Impermeable Cap Area	LSFG						92% ~~95~~% Required
1	I-11		05-243	98.5	4.5		88.5	
2	L-11				3.9		95.6	
3	M-11				6.1		92.9	
4	M-11				5.5		95.1	
5	N-11				5.1		97.1	
6	O-11				6.0		97.6	
7	P-11				6.5		98.8	
8	R-11						96.4	
9	R-12						97.7	
10	Q-11						97.4	
11	T-12						95.3	
12	S-12						~~95.3~~	93.9
13	S-11						~~93.4~~	91.2*
14	T-11						~~91.2~~	*94.6
15	T-10						~~94.6~~	97.5
16	S-10						~~97.5~~	100+
17	S-9						~~100+~~	100+
18	T-9						~~100+~~	97.8
19	O-10						95.1	
20	U-12						94.3	
21	V-12						99.3	
22	U-11						97.1	
23	V-11						95.2	
24	V-10						92.8	
25	U-10						95.6	
26	U-9						100+	

+Leveling Sand Finish Grade

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Effective Date: 02/05/04

\\MKL\Daily Reports\Project No. 1600-1699\1604-11\1604-11rjp06.doc/mkl

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	7-1-05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Friday
WEATHER	Sunny Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Leveling Sand	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	CORRECTED MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Leveling Sand Impermeable Cap Area	LSFG						95% Required
27	V-9						100+	
28	U-8						91.0	*
29	V-8						100+	
30	V-7						100+	
31	U-7						100+	
32	T-7						100+	
33	S-7						100+	
34	S-6						100+	
35	W-7						96.5	
36	X-8						98.6	
37	Y-8						98.6	
38	Z-9						100+	

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Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

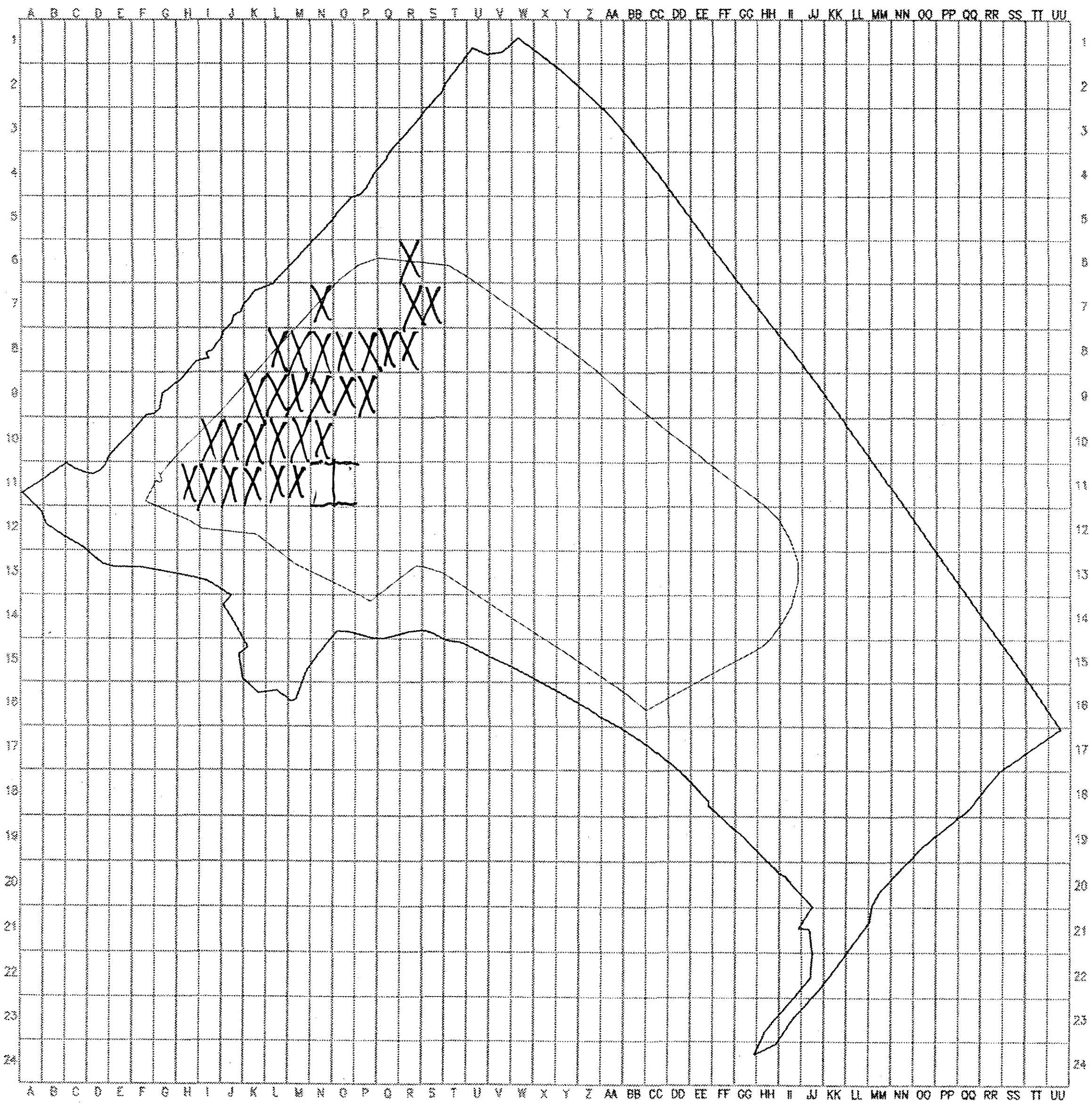
- [ ] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [x] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

Attached are the compaction results for the part of the sand drainage area. Note that DEA was onsite already and their topo was given earlier in the day.

[signature] 7/28/05

Wilder Representative — Date — Owner Representative — Date



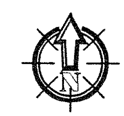
Legend

Site Boundary

Barrier Wall

A 1 100' 50' = 5,000 SF

Grid Detail
NTS



GRAPHIC SCALE

DIRTLOGIC

McCormick and Baxter Creosoting Co. Site Grid

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	13
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	07/27/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Wednesday
WEATHER	Sunny, Warm	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
1	Grid R-7	TDS	05-243	98.5	4.3	93.1	94.5	
2	Grid R-6	TDS	05-243	98.5	4.5	93.3	94.7	
3	Grid Q-8	TDS	05-243	98.5	3.6	97.8	99.3	
4	Grid P-8	TDS	05-243	98.5	3.9	94.4	95.8	
5	Grid J-9	TDS	05-243	98.5	3.3	88.9	90.3	
6	*Grid L-9	TDS	05-243	98.5	2.7	89.8	91.2	
7	Grid M-9	TDS	05-243	98.5	4.6	91.1	92.5	
8	Grid N-9	TDS	05-243	98.5	5.1	96.7	98.2	
9	Grid O-9	TDS	05-243	98.5	4.7	92.3	93.7	
10	Grid P-9	TDS	05-243	98.5	5.2	99.6	100+	
11	Grid N-10	TDS	05-243	98.5	4.5	92.6	94.0	
12	Grid M-10	TDS	05-243	98.5	4.0	92.6	94.0	
13	Grid L-10	TDS	05-243	98.5	3.8	93.6	95.0	
14	Grid K-10	TDS	05-243	98.5	3.7	90.6	92.0	
15	Grid J-10	TDS	05-243	98.5	3.9	88.7	90.1	
16	Grid I-10	TDS	05-243	98.5	3.9	90.1	91.5	
17	Grid H-11	TDS	05-243	98.5	4.7	89.8	91.2	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand in the impermeable cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. Grid *L-9 from 07/18/05 (Test No. 9) verified to be grid K-9. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 90% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

As per Jacob Zacharda, Wilder Construction, on 07/27/05, requirement for minimum compaction on drainage sand is 90%, lowered from revised requirement of 92%.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	13
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	07/27/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Wednesday
WEATHER	Sunny, Warm	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
18	Grid I-11	TDS	05-243	98.5	3.6	93.7	95.1	
19	Grid J-11	TDS	05-243	98.5	3.0	92.6	94.0	
20	Grid K-11	TDS	05-243	98.5	3.5	93.3	94.7	
21	Grid L-11	TDS	05-243	98.5	3.2	91.9	93.3	
22	Grid M-11	TDS	05-243	98.5	4.0	94.5	95.9	
23	Grid O-8	TDS	05-243	98.5	3.9	93.5	94.9	
24	Grid L-8	TDS	05-243	98.5	3.6	98.5	100	
25	Grid N-7	TDS	05-243	98.5	2.8	91.1	92.5	Retest of Test No. 6, Report No. 12 (07/18/05)
26	Grid R-8	TDS	05-243	98.5	3.6	101.2	100+	
27	Grid S-7	TDS	05-243	98.5	5.5	93.6	95.0	

*TDS = Top of Drainage Sand

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [x] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

Attached are the compaction results for the part of the sand drainage area. Note that DEA was onsite already and their topo was sent earlier in the day.

[signature] 8/2/05

Wilder Representative — Date

Owner Representative — Date

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	14
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Monday
WEATHER	Overcast, Warm	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
1	Grid U-7	TDS	05-243	98.5	4.4	92.9	94.3	
2	Grid T-7	TDS	05-243	98.5	4.4	91.8	93.2	
3	Grid S-8	TDS	05-243	98.5	3.3	95.5	97.0	
4	Grid T-8	TDS	05-243	98.5	3.9	99.6	100+	
5	Grid U-8	TDS	05-243	98.5	3.9	91.8	93.2	
6	Grid U-9	TDS	05-243	98.5	4.9	93.7	95.1	
7	Grid T-9	TDS	05-243	98.5	4.8	92.9	94.3	
8	Grid S-9	TDS	05-243	98.5	3.3	95.5	97.0	
9	Grid R-9	TDS	05-243	98.5	4.5	95.1	96.5	
10	Grid Q-9	TDS	05-243	98.5	3.3	94.2	95.6	
11	Grid O-10	TDS	05-243	98.5	4.1	95.4	96.9	
12	Grid P-10	TDS	05-243	98.5	5.4	91.6	93.0	
13	Grid Q-10	TDS	05-243	98.5	3.2	96.1	97.6	
14	Grid N-11	TDS	05-243	98.5	4.1	92.4	93.8	
15	Grid O-11	TDS	05-243	98.5	3.2	95.3	96.8	
16	Grid P-11	TDS	05-243	98.5	4.7	91.3	92.7	
17	Grid Q-11	TDS	05-243	98.5	4.6	91.6	93.0	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand in the impermeable cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 90% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

In addition, Grid BB-5 at finish subgrade (test No. 7 dated 06/29/05) was loosened and accepted by E&E and Wilder Construction with no re-test required per Jacob Zacharda, Wilder Construction.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	14
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Monday
WEATHER	Overcast, Warm	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
18	Grid Q-12	TDS	05-243	98.5	4.3	89.6	91.0	
19	Grid P-12	TDS	05-243	98.5	4.6	89.9	91.3	
20	Grid O-12	TDS	05-243	98.5	4.5	90.7	92.1	
21	Grid N-12	TDS	05-243	98.5	4.3	91.3	92.7	
22	Grid S-6	TDS	05-243	98.5	4.2	89.3	90.7	
23	Grid V-8	TDS	05-243	98.5	3.8	92.6	94.0	
24	Grid W-8	TDS	05-243	98.5	3.9	92.4	93.8	

*TDS = Top of Drainage Sand

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Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	12
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	07/18/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Monday
WEATHER	Sunny, Hot	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243); Ross Island Topsoil (05-262); Topsoil On-site Stockpile (05-226)	VISITORS	

overlying Layer

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						92% Required
1	Grid Q-6	TDS	05-243	98.5	3.4	98.1	99.6	
2	Grid Q-7	TDS	05-243	98.5	4.4	92.5	93.9	
3	Grid P-7	TDS	05-243	98.5	3.4	93.0	94.4	
4	Grid P-6	TDS	05-243	98.5	4.5	91.4	92.8	
5	Grid O-7	TDS	05-243	98.5	5.0	91.4	92.8	
6	Grid N-7	TDS	05-243	98.5	4.5	86.9	88.2	
7	Grid M-8	TDS	05-243	98.5	4.1	92.3	93.7	
8	Grid N-8	TDS	05-243	98.5	3.9	97.9	99.4	
9	Grid L-9	TDS	05-243	98.5	4.1	94.3	95.7	
	Soil Cap Area Topsoil	**FG						75% to 85% Required
10	Grid U-3	FG	05-262	105.0	5.9	107.5	100+	
11	Grid CC-5	FG	05-226	110.5	13.5	86.7	78.4	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand in the impermeable cap area as well as topsoil in the soil cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, with the exception of test No.'s 6 and 10, all tests provided met the project requirements of a minimum of 92% of the maximum dry density within the impermeable cap area and the range 75% to 85% of the maximum dry density in the soil cap area as determined by ASTM D698. NGI informed Jeremy Smith, Wilder Construction, of all test results and observations.

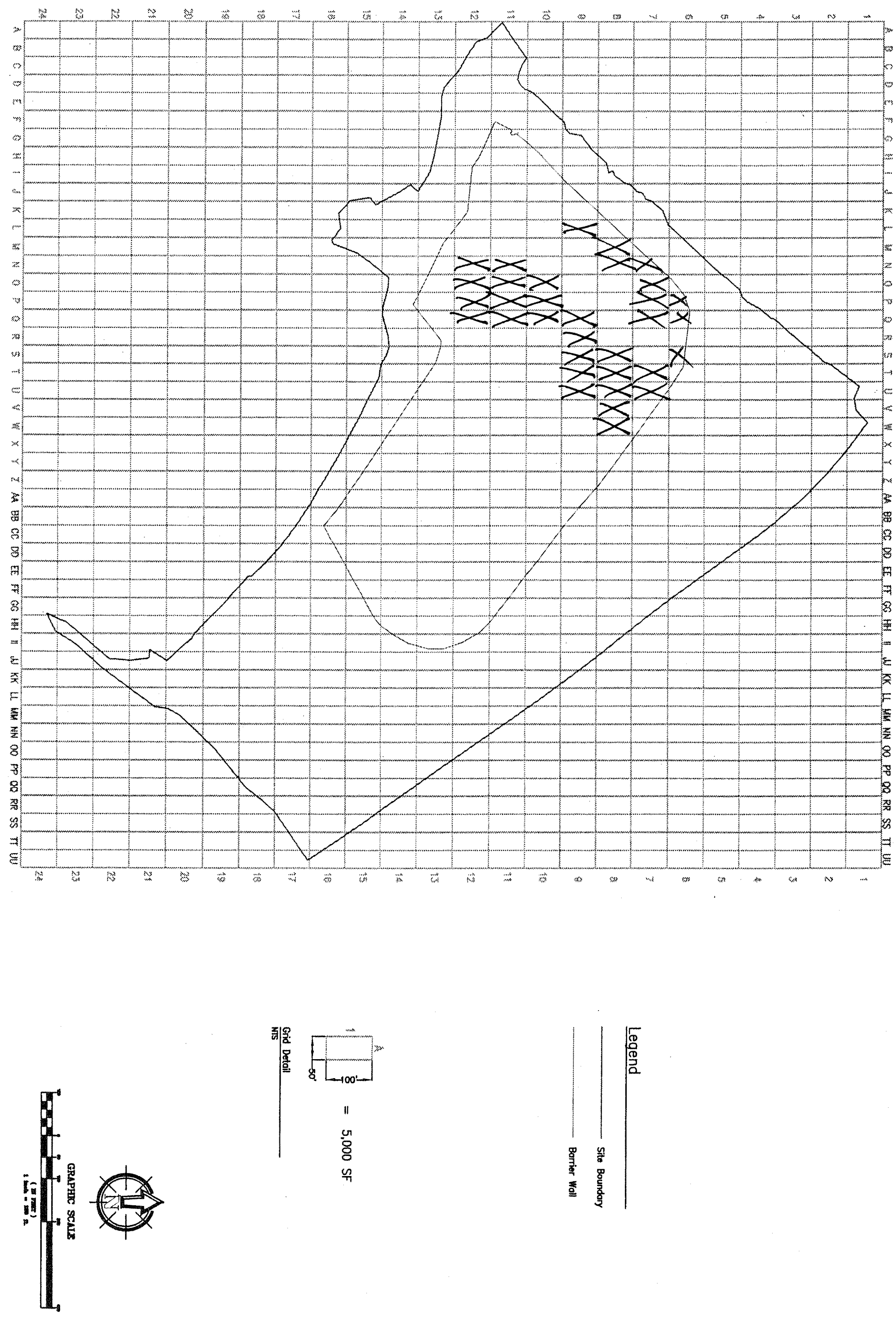
FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN ***ITALICS***

Effective Date: 02/05/04



McCORMICK AND BAXTER CREOSOTING CO.
SITE GRID

DIRTLOGIC LLC

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	16
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/04/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, Warm	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
1	Grid Y-8	TDS	05-243	98.5	4.3	91.8	93.2	
2	Grid Y-9	TDS	05-243	98.5	4.7	94.9	96.3	
3	Grid Y-10	TDS	05-243	98.5	4.4	94.9	96.3	
4	Grid X-10	TDS	05-243	98.5	4.3	92.1	93.5	
5	Grid W-10	TDS	05-243	98.5	5.0	93.9	95.3	
6	Grid V-10	TDS	05-243	98.5	4.5	96.9	98.4	
7	Grid V-11	TDS	05-243	98.5	4.5	97.9	99.4	
8	Grid U-11	TDS	05-243	98.5	5.8	93.5	94.9	
9	Grid T-11	TDS	05-243	98.5	3.7	96.7	98.2	
10	Grid S-12	TDS	05-243	98.5	3.9	91.3	92.7	
11	Grid T-12	TDS	05-243	98.5	2.6	92.2	93.6	
12	Grid U-12	TDS	05-243	98.5	4.0	92.2	93.6	
13	Grid Z-9	TDS	05-243	98.5	4.9	90.2	91.6	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand in the impermeable cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 90% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	15
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/03/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Wednesday
WEATHER	Sunny, Mild	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
1	Grid X-8	TDS	05-243	98.5	4.8	96.0	97.5	
2	Grid U-9	TDS	05-243	98.5	4.4	96.8	98.3	
3	Grid S-10	TDS	05-243	98.5	4.9	94.2	95.6	
4	Grid R-10	TDS	05-243	98.5	4.9	91.7	93.1	
5	Grid R-11	TDS	05-243	98.5	4.4	94.0	95.4	
6	Grid R-12	TDS	05-243	98.5	4.5	91.0	92.4	
7	Grid S-11	TDS	05-243	98.5	4.3	92.0	93.4	
8	Grid T-10	TDS	05-243	98.5	4.4	94.2	95.6	
9	Grid U-10	TDS	05-243	98.5	4.3	92.0	93.4	
10	Grid V-9	TDS	05-243	98.5	4.9	97.0	98.5	
11	Grid W-9	TDS	05-243	98.5	3.7	91.4	92.8	
12	Grid X-9	TDS	05-243	98.5	4.1	94.2	95.6	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand in the impermeable cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 90% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [x] Sand Layer (Drainage): > 90%
- [x] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

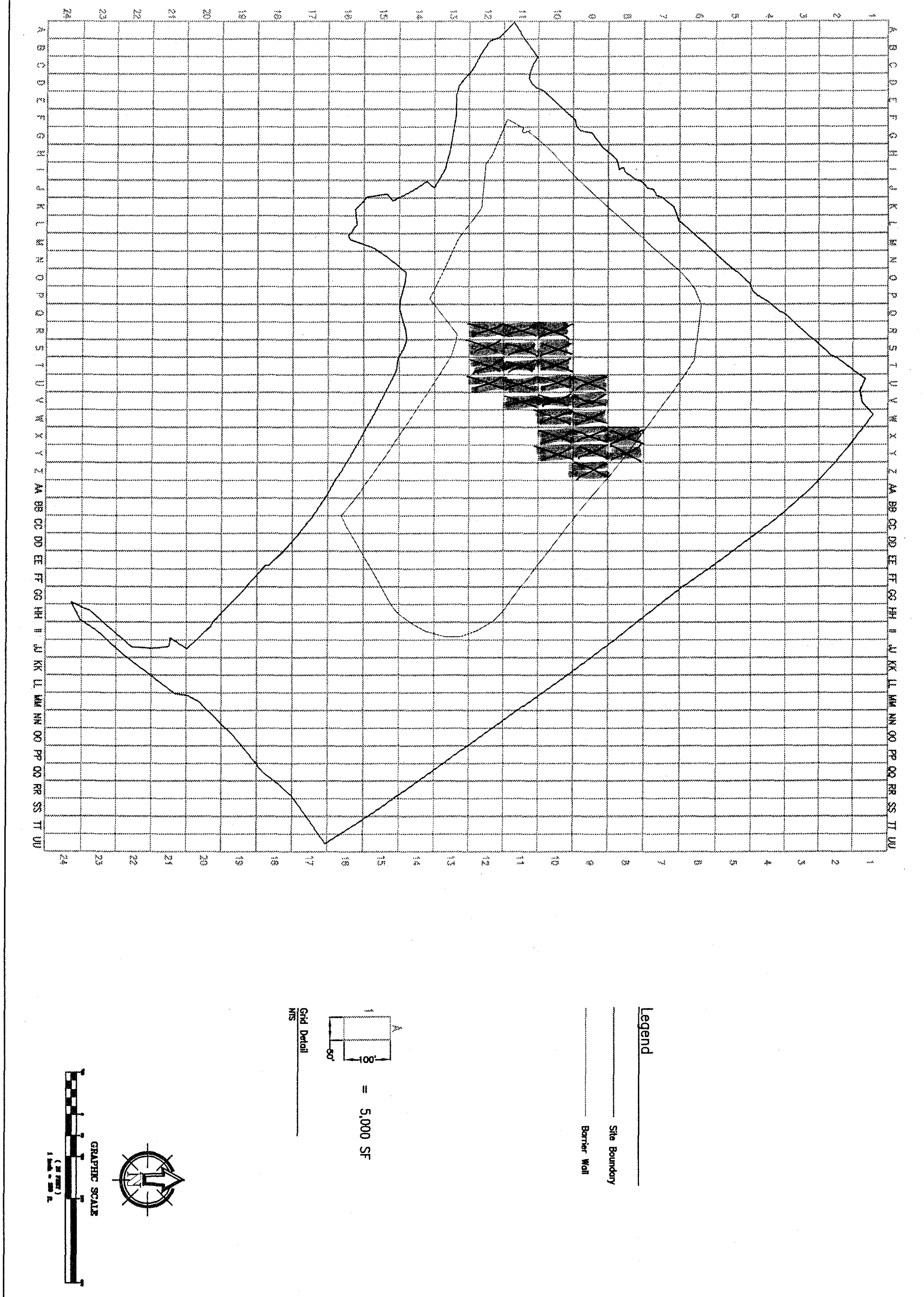
Notes:

Attached are the compaction results for the part of the sand drainage area. Note that DEA was onsite already and their topo was sent earlier in the day.

[signature] 8/5/05

Wilder Representative Date

Owner Representative Date



McCormick and Baxter Creosoting Co.
Site Grid

DIRTLOGIC LLC

Northwest Geotech, Inc. Draft

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME McCormick + Baxter upland Cap

PROJECT NO. 1604.1.1

PERMIT NO.

PAGE 1 OF 1

PROJECT LOCATION	CLIENT OR OWNER	REPORT SEQUENCE NO.
GENERAL CONTRACTOR	GENERAL CONTRACTOR'S REPRESENTATIVE	DATE 8/3/05
GRADING CONTRACTOR	GRADING FOREMAN	DAY OF WEEK Wednesday
WEATHER	SOURCE AND DESCRIPTION OF FILL MATERIAL	VISITORS

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap	Area	drainage sand					
1	X 8						97.5	
2	U9						98.3	
3	S 10						95.6	
4	R 10						93.1	
5	R 11						95.4	
6	R 12						92.4	
7	S 11						93.4	
8	T 10						95.6	
9	U 10						93.4	
10	V9						98.4	
11	W9						92.8	
12	X9						95.6	

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY:

COPIES TO:

Northwest Geotech, Inc. DRAFT

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick + Baxter Upland Cap
PROJECT NO.	1604.1.1
PAGE 1	OF 1

PERMIT NO.

PROJECT LOCATION	CLIENT OR OWNER	REPORT SEQUENCE NO.
GENERAL CONTRACTOR	GENERAL CONTRACTOR'S REPRESENTATIVE	DATE 8/4/05
GRADING CONTRACTOR	GRADING FOREMAN	DAY OF WEEK Thursday
WEATHER	SOURCE AND DESCRIPTION OF FILL MATERIAL	VISITORS

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
/	Impermeable Cap Area		Drainage	Sand				90% Required
1	Y8						93.2	
2	Y9						96.3	
3	Y10						96.3	
4	X10						93.5	
5	W10						95.3	
6	V10						98.4	
7	V11						99.3	
8	U11						94.9	
9	T11						98.1	
10	S12						92.7	
11	T12						93.6	
12	U12						93.6	
13	Z9						91.5	

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY:

COPIES TO:

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN ***ITALICS*** Effective Date: 02/05/04

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [x] Sand Layer (Drainage): > 90%
- [x] Biotic Layer: Visual Inspection
- [ ] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

Attached are the compaction results for the part of the sand drainage area. Note that DEA was onsite already and their topo was sent earlier in the day.

[signature]	8/11/05		
Wilder Representative	Date	Owner Representative	Date
	8/15/05		

Northwest Geotech, Inc. DRAFT

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME McCormick + Baxter Upland Cap

PROJECT NO. 1604.1.1

PERMIT NO.

PAGE 1 OF 1

PROJECT LOCATION	CLIENT OR OWNER	REPORT SEQUENCE NO.
GENERAL CONTRACTOR	GENERAL CONTRACTOR'S REPRESENTATIVE	DATE 8/11/05
GRADING CONTRACTOR	GRADING FOREMAN	DAY OF WEEK Thursday
WEATHER	SOURCE AND DESCRIPTION OF FILL MATERIAL	VISITORS

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand							90% required
1	EE 11						97.6	
2	FF 11						93.4	
3	GG 12						91.3	
4	BB 12						94.7	
5	AA 12						95.3	
6	Z 12						93.1	
7	X 13						90.5	
8	Y 13						90.9	
9	Z 13						91.1	
10	AA 13						90.7	
11	BB 13						92.7	
12	CC 13						92.3	
13	DD 13						97.9	
14	EE 13						96.7	
15	DD 14						93.0	
16	CC 14						94.5	
17	BB 14						91.3	
18	AA 14						90.4	
19	CC 12						99.9	
20	DD 12						94.7	
21	EE 12						95.4	
22	FF 12						100+	

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY:

COPIES TO:

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	17
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/05/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Friday
WEATHER	Sunny, Warm	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
1	Grid AA-9	TDS	05-243	98.5	5.7	98.8	100+	
2	Grid BB-9	TDS	05-243	98.5	5.2	93.6	95.0	
3	Grid AA-10	TDS	05-243	98.5	4.8	92.7	94.1	
4	Grid Z-10	TDS	05-243	98.5	4.9	95.6	97.1	
5	Grid Y-11	TDS	05-243	98.5	4.1	89.0	90.4	
6	Grid X-11	TDS	05-243	98.5	5.1	100.0	100+	
7	Grid X-12	TDS	05-243	98.5	4.6	93.2	94.6	
8	Grid W-11	TDS	05-243	98.5	5.5	94.9	96.3	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand in the impermeable cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 90% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS* Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	18
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/09/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER	Sunny, 60's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
1	Grid BB-10	TDS	05-243	98.5	4.6	93.1	94.5	
2	Grid Z-11	TDS	05-243	98.5	2.8	92.8	94.2	
3	Grid AA-11	TDS	05-243	98.5	5.0	94.5	95.9	
4	Grid BB-11	TDS	05-243	98.5	4.7	92.4	93.8	
5	Grid CC-11	TDS	05-243	98.5	4.1	91.1	92.5	
6	Grid DD-11	TDS	05-243	98.5	5.0	90.0	91.4	
7	Grid CC-12	TDS	05-243	98.5	4.8	94.3	95.7	
8	Grid V-12	TDS	05-243	98.5	3.9	94.0	95.4	
9	Grid W-13	TDS	05-243	98.5	5.5	91.3	92.7	
10	Grid W-12	TDS	05-243	98.5	5.0	94.5	95.9	
11	Grid Y-12	TDS	05-243	98.5	4.1	92.9	94.3	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand in the impermeable cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 90% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

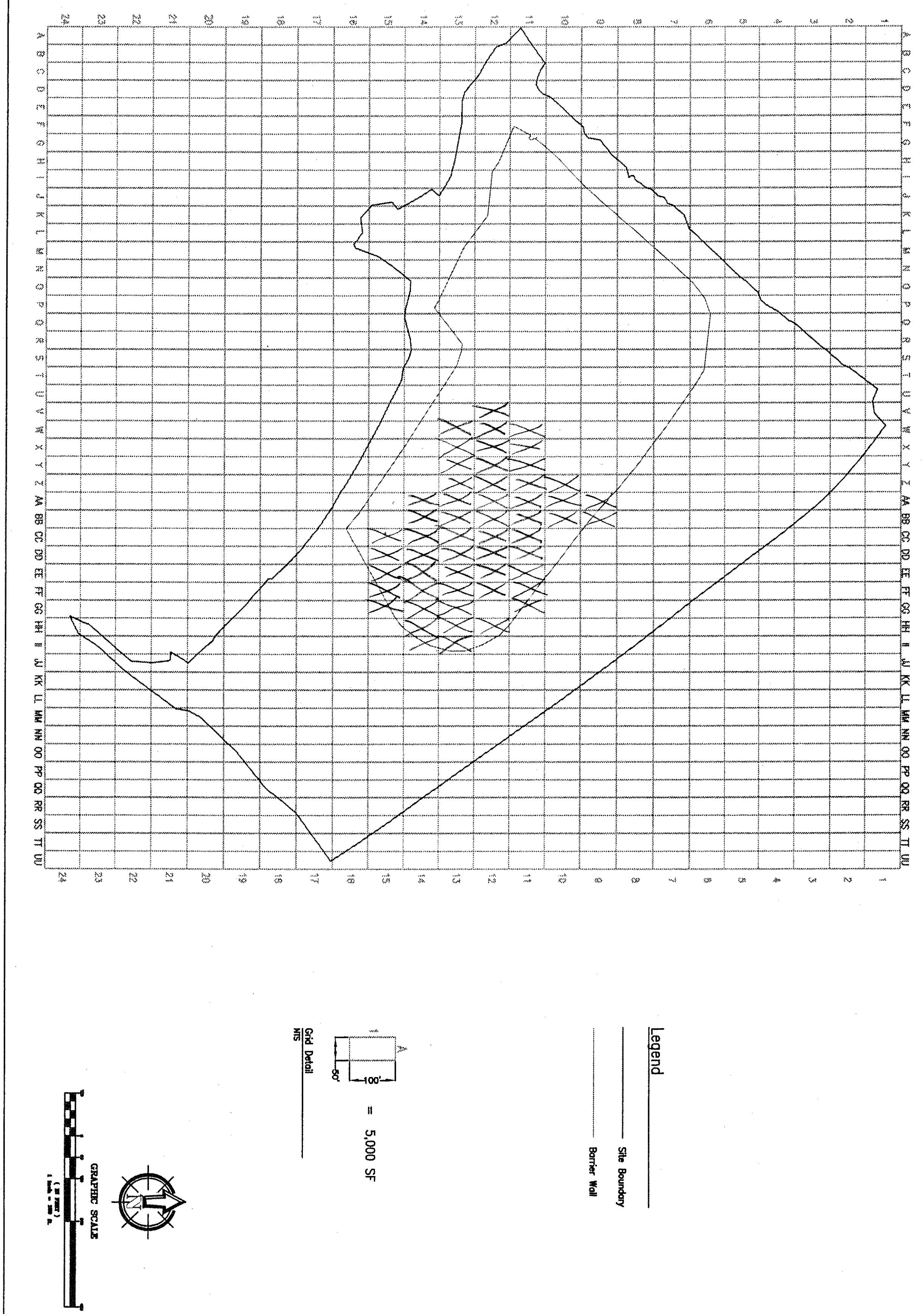
FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04



McCormick and Baxter Creosoting Co.
Site Grid

DIRTLOGIC LLC

Northwest Geotech, Inc. DRAFT

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME McCormick + Baxter Upland Cap

PROJECT NO. 1004.1.1

PERMIT NO.

PAGE 1 OF 1

PROJECT LOCATION	CLIENT OR OWNER	REPORT SEQUENCE NO.
GENERAL CONTRACTOR	GENERAL CONTRACTOR'S REPRESENTATIVE	DATE 8/12/05
GRADING CONTRACTOR	GRADING FOREMAN	DAY OF WEEK Friday
WEATHER	SOURCE AND DESCRIPTION OF FILL MATERIAL	VISITORS

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
/	Impermeable Cap area			Drainage		Sand		90%
1	HH 12							95.8
2	FF 13							96.8
3	GG 13							93.1
4	HH 13							93.0
5	II 13							93.2
6	HH 14							92.7
7	GG 14							93.1
8	FF 14							94.2
9	EE 14							92.9
10	CC 15							92.5
11	DD 15							93.5
12	EE 15							93.0
13	FF 15							97.2
14	GG 15							90.2

FIELD REPRESENTATIVE: Adam Kozlofsky

REVIEWED BY:

COPIES TO:

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070

FACSIMILE TRANSMITTAL

TO:	Jacob Zacharda	FROM: Tom Ginsbach
COMPANY:	Wilder Construction Company	
FAX:	503-289-4145	**NORTHWEST TESTING, INC.** (503) 682-1880 PHONE (503) 682-2753 FAX
PHONE:	425-754-6640	

DATE AND TIME SENT

08/11/05 4:31 PM

NUMBER OF PAGES INCLUDING TRANSMITTAL

2

SPECIAL INSTRUCTIONS

Project No. 1604.1.1

McCormick & Baxter Upland CAP

Daily Report of Inspection Activities No. 19

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 1

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	19
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/11/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Overcast, 70's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Ross Island Leveling Sand (05-243)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area Drainage Sand	*TDS						90% Required
1	Grid EE-11	TDS	05-243	98.5	3.1	96.2	97.7	
2	Grid FF-11	TDS	05-243	98.5	4.2	92.0	93.4	
3	Grid GG-12	TDS	05-243	98.5	4.2	89.9	91.3	
4	Grid BB-12	TDS	05-243	98.5	3.6	93.3	94.7	
5	Grid AA-12	TDS	05-243	98.5	5.2	93.9	95.3	
6	Grid Z-12	TDS	05-243	98.5	4.5	91.7	93.1	
7	Grid X-13	TDS	05-243	98.5	4.1	89.1	90.5	
8	Grid Y-13	TDS	05-243	98.5	5.0	89.5	90.9	
9	Grid Z-13	TDS	05-243	98.5	4.6	89.7	91.1	
10	Grid AA-13	TDS	05-243	98.5	5.2	89.3	90.7	
11	Grid BB-13	TDS	05-243	98.5	5.2	91.3	92.7	
12	Grid CC-13	TDS	05-243	98.5	5.0	90.9	92.3	
13	Grid DD-13	TDS	05-243	98.5	5.4	96.5	98.0	
14	Grid EE-13	TDS	05-243	98.5	5.1	95.2	96.6	
15	Grid DD-14	TDS	05-243	98.5	4.4	91.6	93.0	
16	Grid CC-14	TDS	05-243	98.5	5.3	93.1	94.5	
17	Grid BB-14	TDS	05-243	98.5	4.7	89.9	91.3	
18	Grid AA-14	TDS	05-243	98.5	4.1	89.0	90.4	
19	Grid CC-12	TDS	05-243	98.5	5.2	97.9	99.4	
20	Grid DD-12	TDS	05-243	98.5	3.6	93.3	94.7	
21	Grid EE-12	TDS	05-243	98.5	4.2	94.0	95.4	
22	Grid FF-12	TDS	05-243	98.5	3.4	98.9	100+	

*TDS = Top of Drainage Sand

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of the drainage sand placed in the impermeable cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 90% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS* Effective Date: 02/05/04

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [x] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

Attached are the compaction reports for the topsoil.

[signature]	8/25/05		
Wilder Representative	Date	Owner Representative	Date

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 1	OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	21
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/22/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Monday
WEATHER	Overcast, 70's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Gravelly, Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
1	Grid QQ-17	FG	05-226	112.5	10.7	88.1	78.3	
2	Grid RR-17	FG	05-226	112.5	7.2	95.0	84.4	
3	Grid SS-17	FG	05-226	112.5	6.6	94.8	84.3	
4	Grid SS-16	FG	05-226	112.5	3.9	92.1	81.9	
5	Grid RR-16	FG	05-226	112.5	4.2	87.3	77.6	
6	Grid QQ-16	FG	05-226	112.5	6.8	89.2	79.3	
7	Grid PP-16	FG	05-226	112.5	4.5	93.7	83.3	
8	Grid OO-16	FG	05-226	112.5	5.8	94.1	83.6	
9	Grid PP-17	FG	05-226	112.5	4.5	86.7	77.1	
10	Grid QQ-15	FG	05-226	112.5	7.4	89.5	79.6	
11	Grid PP-15	FG	05-226	112.5	5.1	87.7	78.0	
12	Grid OO-15	FG	05-226	112.5	5.9	86.9	77.2	
13	Grid NN-15	FG	05-226	112.5	5.7	91.7	81.5	
14	Grid NN-16	FG	05-226	112.5	6.2	92.4	82.1	
15	Grid MM-14	FG	05-226	112.5	8.4	85.9	76.4	
16	Grid NN-14	FG	05-226	112.5	8.1	88.8	78.9	
17	Grid OO-14	FG	05-226	112.5	9.2	84.6	75.2	
18	Grid PP-14	FG	05-226	112.5	7.2	87.9	78.1	
19	Grid NN-13	FG	05-226	112.5	6.5	89.0	79.1	
20	Grid MM-13	FG	05-226	112.5	4.6	93.8	83.4	
21	Grid MM-12	FG	05-226	112.5	8.6	84.4	75.0	

*FG = Finish Grade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of topsoil placed in the soil cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 75-85% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	21
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/22/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Monday
WEATHER	Overcast, 70's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Gravelly, Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
22	Grid LL-12	FG	05-226	112.5	3.9	88.5	78.7	
23	Grid KK-11	FG	05-226	112.5	8.9	95.2	84.6	
24	Grid JJ-11	FG	05-226	112.5	9.1	94.3	83.8	
25	Grid JJ-10	FG	05-226	112.5	8.0	87.5	77.8	
26	Grid II-10	FG	05-226	112.5	6.7	93.3	82.9	
27	Grid HH-10	FG	05-226	112.5	9.1	95.5	84.9	

*FG = Finish Grade

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	22
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/23/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER	Mostly Cloudy, 70's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Gravelly, Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
1	Grid MM-15	FG	05-226	112.5	6.9	86.9	77.2	
2	Grid LL-15	FG	05-226	112.5	6.4	92.8	82.5	
3	Grid KK-15	FG	05-226	112.5	5.9	90.5	80.4	
4	Grid JJ-15	FG	05-226	112.5	8.9	92.1	81.9	
5	Grid II-15	FG	05-226	112.5	7.5	85.1	75.6	
6	Grid HH-15	FG	05-226	112.5	7.2	89.2	79.3	
7	Grid GG-15	FG	05-226	112.5	3.3	94.8	84.3	
8	Grid GG-16	FG	05-226	112.5	6.6	93.7	83.3	
9	Grid HH-16	FG	05-226	112.5	8.4	88.3	78.5	
10	Grid II-16	FG	05-226	112.5	8.1	89.3	79.4	
11	Grid JJ-16	FG	05-226	112.5	7.0	91.7	81.5	
12	Grid KK-16	FG	05-226	112.5	7.2	89.0	79.1	
13	Grid LL-16	FG	05-226	112.5	9.2	86.4	76.8	
14	Grid MM-16	FG	05-226	112.5	10.3	89.6	79.6	
15	Grid LL-17	FG	05-226	112.5	5.5	92.9	82.6	
16	Grid KK-17	FG	05-226	112.5	13.6	88.3	78.5	
17	Grid JJ-17	FG	05-226	112.5	10.2	88.3	78.5	
18	Grid II-17	FG	05-226	112.5	6.0	89.5	79.6	
19	Grid LL-18	FG	05-226	112.5	6.1	86.5	76.9	
20	Grid II-14	FG	05-226	112.5	3.4	93.1	82.8	
21	Grid JJ-14	FG	05-226	112.5	8.5	89.6	79.6	

*FG = Finish Grade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of topsoil placed in the soil cap area. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, all tests met the project requirements of a minimum of 75-85% of the maximum dry density as determined by ASTM D698. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	22
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/23/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Tuesday
WEATHER	Mostly Cloudy, 70's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Gravelly, Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
22	Grid KK-14	FG	05-226	112.5	4.9	92.2	82.0	
23	Grid LL-14	FG	05-226	112.5	7.8	94.9	84.6	
24	Grid LL-13	FG	05-226	112.5	8.2	91.4	81.2	
25	Grid KK-13	FG	05-226	112.5	12.4	93.3	82.9	
26	Grid JJ-13	FG	05-226	112.5	5.3	90.3	80.3	
27	Grid II-12	FG	05-226	112.5	3.6	90.4	80.4	
28	Grid JJ-12	FG	05-226	112.5	6.7	89.6	79.6	
29	Grid KK-12	FG	05-226	112.5	9.7	86.3	76.7	
30	Grid II-11	FG	05-226	112.5	6.9	94.9	84.4	
31	Grid HH-11	FG	05-226	112.5	4.6	88.3	78.5	
32	Grid GG-11	FG	05-226	112.5	3.9	92.1	81.9	
33	Grid GG-10	FG	05-226	112.5	3.7	93.1	82.8	
34	Grid FF-10	FG	05-226	112.5	5.8	94.2	83.7	
35	Grid EE-10	FG	05-226	112.5	6.0	90.0	80.0	
36	Grid FF-9	FG	05-226	112.5	10.6	84.6	75.2	
37	Grid EE-9	FG	05-226	112.5	6.8	92.3	82.0	
38	Grid DD-9	FG	05-226	112.5	8.5	88.7	78.8	
39	Grid CC-9	FG	05-226	112.5	6.4	91.5	81.3	
40	Grid BB-9	FG	05-226	112.5	6.1	87.9	78.1	

*FG = Finish Grade

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Placement Verification Form

McCormick and Baxter Upland Cap
Task Order No. 71-03-14

WILDER
WILDER CONSTRUCTION COMPANY

Pursuant to the Special Provisions Division 2, Section 02200, 3.6A.1.C; Wilder Construction certifies on this Placement Verification Form that the material has been placed in accordance with the Contract Documents and with any agreements that are in place at the time of the certification in the noted area.

Wilder hereby submits the following layer for approval:

Grid Identification Number: see attached chart (see notes below)

- [ ] Subgrade (outside barrier wall): 75% - 85%
- [ ] Subgrade (within barrier wall): > 95%
- [ ] Sand Layer (Leveling): > 92%
- [ ] Sand Layer (Drainage): > 90%
- [ ] Biotic Layer: Visual Inspection
- [x] Topsoil: 75% - 85%
- [ ] Gravel Access Roads: > 95%

Notes:

Attached are the compaction reports for the topsoil. 8-25-05
8-31-05
9-1-05
9-2-05

[signature]	9-26-05		
Wilder Representative	Date	Owner Representative	Date

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	23
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/25/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Gravelly, Sandy Silt Topsoil (05-226); R.I. Topsoil (05-262)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
1	Grid II-9	FG	05-226	112.5	5.3	94.7	84.2	
2	Grid HH-9	FG	05-226	112.5	5.6	95.5	84.9	
3	Grid GG-9	FG	05-226	112.5	6.7	93.3	82.9	
4	Grid DD-8	FG	05-226	112.5	8.9	91.8	81.6	
5	Grid EE-8	FG	05-226	112.5	9.2	86.3	76.7	
6	Grid FF-8	FG	05-226	112.5	4.4	91.9	81.7	
7	Grid GG-8	FG	05-226	112.5	3.7	90.5	80.4	
8	Grid HH-8	FG	05-226	112.5	2.2	86.6	77.0	
9	Grid GG-7	FG	05-226	112.5	3.7	92.5	82.2	
10	Grid FF-7	FG	05-226	112.5	3.9	91.6	81.4	
11	Grid EE-7	FG	05-226	112.5	3.0	94.6	84.1	
12	Grid DD-7	FG	05-226	112.5	4.1	90.4	80.4	
13	Grid CC-7	FG	05-226	112.5	5.4	93.6	83.2	
14	Grid BB-7	FG	05-226	112.5	7.8	89.2	79.3	
15	Grid AA-7	FG	05-226	112.5	7.6	92.1	81.9	
16	Grid Z-6	FG	05-226	112.5	7.3	86.4	76.8	
17	Grid AA-6	FG	05-226	112.5	6.5	84.4	75.0	
18	Grid BB-6	FG	05-226	112.5	4.2	93.3	82.9	

*FG = Finish Grade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of topsoil placed in the soil cap and impermeable cap areas. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, the test results in the soil cap area met the project requirements of a minimum of 75-85% of the maximum dry density as determined by ASTM D698. However, test No. 25 in the impermeable cap area did not meet project specifications. NGI informed Jacob Zacharda, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 2	OF 2

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	23
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/25/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Gravelly, Sandy Silt Topsoil (05-226); R.I. Topsoil (05-262)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
19	Grid CC-6	FG	05-226	112.5	2.9	93.8	83.4	
20	Grid DD-6	FG	05-226	112.5	3.4	88.4	78.6	
21	Grid EE-6	FG	05-226	112.5	3.1	93.0	82.7	
22	Grid DD-5	FG	05-226	112.5	3.2	91.9	81.7	
23	Grid CC-5	FG	05-226	112.5	3.2	91.5	81.3	
24	Grid BB-5	FG	05-226	112.5	2.9	91.8	81.6	
	Impermeable Cap Area							
25	Grid U-7	FG	05-262	104.0	3.3	98.8	95.0	

*FG = Finish Grade

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 1	OF 3

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	24
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	08/31/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Wednesday
WEATHER	Sunny, 70's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. 1½"-0 Crushed Aggregate (05-365); Ross Island Topsoil (05-367)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Impermeable Cap Area	*FG						75-85% Required
1	Grid V-7	FG	05-367	106.5	7.9	85.7	80.5	
2	Grid U-7	FG	05-367	106.5	8.3	87.0	81.7	Retest of Test No. 25, Report No. 23 (08/25/05)
3	Grid T-7	FG	05-367	106.5	8.7	86.6	81.3	
4	Grid S-7	FG	05-367	106.5	9.1	85.0	79.8	
5	Grid R-7	FG	05-367	106.5	7.1	86.1	80.8	
6	Grid Q-7	FG	05-367	106.5	7.3	87.9	82.5	
7	Grid P-7	FG	05-367	106.5	7.7	80.3	75.4	
8	Grid O-7	FG	05-367	106.5	7.0	90.3	84.8	
9	Grid N-7	FG	05-367	106.5	6.1	90.0	84.5	
10	Grid P-6	FG	05-367	106.5	8.2	85.8	80.6	
11	Grid Q-6	FG	05-367	106.5	6.7	85.7	80.5	
12	Grid R-6	FG	05-367	106.5	8.4	81.7	76.7	
13	Grid S-6	FG	05-367	106.5	8.3	80.0	75.1	

*FG = Finish Grade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of topsoil placed in the impermeable cap areas and road structural fill along the access roadways. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, the test results in the soil cap area met the project requirements of a minimum of 75-85% of the maximum dry density as determined by ASTM D698, and the tests along the access roads did not meet the project requirements of a minimum of 95% of the maximum dry density as per ASTM D698. However, NGI was later informed that proof-roll observation of the access road base will be completed in lieu of compaction testing. NGI informed Jeremy Smith, Wilder Construction, of all test results and observations.

Note: The sample of 1½"-0 crushed aggregate obtained for proctor testing contained in excess of 53% oversize material (>¾" sieve). Accordingly, the oversize correction for this material is based on extrapolation of the ASTM method since the sample exceeds 40% oversize.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	1 OF 4

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	25
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	09/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367); Gravelly Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Impermeable Cap Area	*FG						75-85% Required
1	Grid FF-11	FG	05-372	109.0	5.2	82.3	75.5	
2	Grid EE-11	FG	05-372	109.0	12.9	89.4	82.0	
3	Grid DD-11	FG	05-372	109.0	7.8	91.5	83.9	
4	Grid CC-11	FG	05-372	109.0	6.4	87.9	80.6	
5	Grid BB-11	FG	05-372	109.0	5.9	83.2	76.3	
6	Grid AA-11	FG	05-372	109.0	3.9	86.7	79.5	
7	Grid Z-11	FG	05-367	106.5	3.2	80.1	75.2	
8	Grid Y-11	FG	05-367	106.5	4.8	87.3	82.0	
9	Grid X-11	FG	05-367	106.5	5.2	83.9	78.8	
10	Grid W-11	FG	05-367	106.5	4.7	81.9	76.9	
11	Grid V-11	FG	05-367	106.5	6.1	89.9	84.4	
12	Grid U-11	FG	05-367	106.5	5.1	88.2	82.8	
13	Grid H-10	FG	05-367	106.5	4.3	86.0	80.8	
14	Grid G-10	FG	05-367	106.5	4.1	83.9	78.8	
15	Grid I-10	FG	05-367	106.5	4.7	82.7	77.7	
16	Grid J-10	FG	05-367	106.5	4.3	81.8	76.8	

*FG = Finish Grade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of topsoil placed in the impermeable cap areas and in the soil cap areas. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, the test results in the soil cap area and the impermeable cap area met the project requirements of a minimum of 75-85% of the maximum dry density as determined by ASTM D698. NGI has been informed by Don Davis, Wilder Construction, and Andrew Murphy, E&E, no further density tests are required on access road. NGI is to observe proof-roll with a fully loaded water truck along all access roads as a substitute. NGI informed Jeremy Smith, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS*

Effective Date: 02/05/04

Northwest Geotech, Inc.

9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE	2 OF 4

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	25
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	09/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367); Gravelly Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Impermeable Cap Area	*FG						75-85% Required
17	Grid K-10	FG	05-367	106.5	3.6	84.5	79.3	
18	Grid L-10	FG	05-367	106.5	3.2	87.1	81.8	
19	Grid M-10	FG	05-367	106.5	3.8	84.7	79.5	
20	Grid N-10	FG	05-367	106.5	3.3	86.8	81.5	
21	Grid O-10	FG	05-367	106.5	5.9	89.2	83.8	
22	Grid P-10	FG	05-367	106.5	4.2	87.6	82.3	
23	Grid Q-10	FG	05-367	106.5	4.8	82.9	77.8	
24	Grid R-10	FG	05-367	106.5	3.1	86.2	80.9	
25	Grid S-10	FG	05-367	106.5	3.9	87.9	82.5	
26	Grid T-10	FG	05-367	106.5	4.8	83.7	78.6	
27	Grid U-10	FG	05-372	109.0	5.4	81.8	75.0	
28	Grid V-10	FG	05-372	109.0	3.2	88.9	81.6	
29	Grid W-10	FG	05-372	109.0	5.1	90.8	83.3	
30	Grid X-10	FG	05-372	109.0	4.3	87.2	80.0	
31	Grid Y-10	FG	05-372	109.0	4.8	90.2	82.8	
32	Grid Z-10	FG	05-372	109.0	3.7	85.8	78.7	
33	Grid AA-10	FG	05-372	109.0	4.6	87.9	80.6	
34	Grid BB-10	FG	05-372	109.0	3.3	84.7	77.7	
35	Grid CC-10	FG	05-372	109.0	2.5	85.4	78.3	
36	Grid DD-10	FG	05-372	109.0	4.6	83.5	76.6	
	Topsoil Soil Cap Area							
37	Grid DD-9	FG	05-226	112.5	3.2	89.8	79.8	
38	Grid CC-9	FG	05-226	112.5	4.5	90.3	80.3	
39	Grid BB-9	FG	05-226	112.5	3.8	91.8	81.6	
	Topsoil Impermeable Cap Area							
40	Grid AA-9	FG	05-372	109.0	3.2	86.1	79.0	
41	Grid Z-9	FG	05-372	109.0	3.8	83.4	76.5	
42	Grid Y-9	FG	05-372	109.0	4.2	84.6	77.6	

*FG = Finish Grade

Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 3 OF 4	

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	25
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	09/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367); Gravelly Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Impermeable Cap Area	*FG						75-85% Required
43	Grid X-9	FG	05-372	109.0	4.7	83.1	76.2	
44	Grid W-9	FG	05-372	109.0	3.8	86.8	79.6	
45	Grid V-9	FG	05-372	109.0	3.1	82.1	75.3	
46	Grid U-9	FG	05-372	109.0	11.1	90.9	83.4	
47	Grid T-9	FG	05-372	109.0	7.4	82.1	75.3	
48	Grid S-9	FG	05-372	109.0	4.8	87.1	81.8	
49	Grid R-9	FG	05-367	106.5	3.7	89.1	83.7	
50	Grid Q-9	FG	05-367	106.5	4.7	80.7	75.8	
51	Grid P-9	FG	05-367	106.5	3.8	89.2	83.8	
52	Grid O-9	FG	05-367	106.5	5.2	84.1	79.0	
53	Grid N-9	FG	05-367	106.5	4.3	87.2	81.9	
54	Grid M-9	FG	05-367	106.5	3.1	81.4	76.4	
55	Grid L-9	FG	05-367	106.5	4.7	88.4	83.0	
56	Grid K-9	FG	05-367	106.5	3.8	89.5	84.0	
57	Grid J-9	FG	05-367	106.5	5.7	88.1	82.7	
58	Grid I-9	FG	05-367	106.5	6.1	90.1	84.6	
59	Grid K-8	FG	05-367	106.5	5.3	83.9	78.8	
60	Grid L-8	FG	05-367	106.5	4.1	88.3	82.9	
61	Grid M-8	FG	05-367	106.5	3.7	89.0	83.6	
62	Grid N-8	FG	05-367	106.5	5.2	88.8	83.4	
63	Grid O-8	FG	05-367	106.5	4.3	85.1	79.9	
64	Grid P-8	FG	05-367	106.5	4.8	83.9	78.8	
65	Grid Q-8	FG	05-367	106.5	3.2	87.5	82.2	
66	Grid R-8	FG	05-367	106.5	4.4	82.0	77.0	
67	Grid S-8	FG	05-367	106.5	3.6	85.3	80.1	
68	Grid T-8	FG	05-367	106.5	5.4	87.4	82.1	
69	Grid U-8	FG	05-372	109.0	3.8	85.5	78.4	
70	Grid V-8	FG	05-372	109.0	4.9	88.2	80.9	

*FG = Finish Grade

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Northwest Geotech, Inc.

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 4	OF 4

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	25
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Jacob Zacharda	DATE	09/01/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Jacob Zacharda	DAY OF WEEK	Thursday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367); Gravelly Sandy Silt Topsoil (05-226)	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Impermeable Cap Area	*FG						75-85% Required
71	Grid W-8	FG	05-372	109.0	3.3	85.9	78.8	
72	Grid X-8	FG	05-372	109.0	3.6	84.8	77.8	
73	Grid Y-8	FG	05-372	109.0	3.7	87.2	80.0	
	Topsoil Soil Cap Area							
74	Grid Z-8	FG	05-226	112.5	4.8	86.9	77.2	
75	Grid AA-8	FG	05-226	112.5	4.2	88.5	78.7	
76	Grid BB-8	FG	05-226	112.5	5.1	88.1	78.3	
77	Grid CC-8	FG	05-226	112.5	4.3	86.2	76.6	
78	Grid Z-7	FG	05-226	112.5	5.6	87.6	77.9	
79	Grid Y-7	FG	05-226	112.5	4.8	89.7	79.7	
80	Grid X-7	FG	05-226	112.5	3.9	86.4	76.8	
81	Grid W-7	FG	05-226	112.5	4.1	85.5	76.0	
82	Grid V-6	FG	05-226	112.5	5.2	93.4	83.0	
83	Grid U-6	FG	05-226	112.5	3.8	90.4	80.4	
84	Grid T-6	FG	05-226	112.5	4.7	89.9	79.9	

*FG = Finish Grade

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DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 1	OF 4

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	26
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Don Davis	DATE	09/02/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Don Davis	DAY OF WEEK	Friday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
1	Grid W-5	FG	05-367	106.5	9.7	89.1	83.7	
2	Grid V-5	FG	05-367	106.5	4.7	89.2	83.8	
3	Grid U-5	FG	05-367	106.5	13.6	86.6	81.3	
4	Grid T-5	FG	05-367	106.5	5.7	88.6	83.2	
5	Grid S-5	FG	05-367	106.5	5.6	89.6	84.1	
6	Grid R-5	FG	05-367	106.5	7.3	83.3	78.2	
7	Grid Q-5	FG	05-367	106.5	8.9	84.6	79.4	
8	Grid R-4	FG	05-367	106.5	4.6	87.3	82.0	
9	Grid S-4	FG	05-367	106.5	3.5	90.5	85.0	
10	Grid T-4	FG	05-367	106.5	5.1	87.6	82.3	
11	Grid U-4	FG	05-367	106.5	4.2	87.6	82.3	
12	Grid V-4	FG	05-367	106.5	13.0	81.4	76.4	
13	Grid Z-3	FG	05-367	106.5	3.4	89.0	83.6	
14	Grid Y-3	FG	05-367	106.5	4.3	86.3	81.0	
15	Grid X-3	FG	05-367	106.5	4.5	88.3	82.9	
16	Grid W-3	FG	05-367	106.5	6.9	88.9	83.5	

*FG = Finish Grade

THE FOLLOWING WAS NOTED:

NGI arrived on-site, as requested, to provide in-place nuclear density testing of topsoil placed in the impermeable cap areas and in the soil cap areas. Test locations and results are listed above. Locations to be verified by Wilder Construction, GPS locator. To the best of NGI's knowledge, the test results in the soil cap area and the impermeable cap area met the project requirements of a minimum of 75-85% of the maximum dry density as determined by ASTM D698.

In addition, NGI observed proof-rolls with a fully loaded water truck along all on-site access roads. Displacement was observed in an appropriate 5' by 20' area along the south access road crossing the impermeable cap at 125' west of the east access road. Displacement was also observed in an area about 580' to 600' south of the northern end of the western access road. The proof-rolling was then stopped and NGI was informed the northerly 600' of the western access road will be recompacted. NGI informed Don Davis, Wilder Construction, of all test results and observations.

FIELD REPRESENTATIVE: Adam Koslofsky

REVIEWED BY: Tom Ginsbach

COPIES TO: Wilder Construction

REVISION(S) TO PREVIOUS DOCUMENT NOTED IN *ITALICS* Effective Date: 02/05/04

Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

DAILY REPORT OF INSPECTION ACTIVITIES

PROJECT NAME	McCormick and Baxter Upland CAP
PROJECT NO.	1604.1.1
PAGE 2	OF 4

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	26
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Don Davis	DATE	09/02/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Don Davis	DAY OF WEEK	Friday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Soil Cap Area	*FG						75-85% Required
17	Grid V-3	FG	05-367	106.5	5.3	82.9	77.8	
18	Grid U-3	FG	05-367	106.5	6.1	89.0	83.6	Retest of Test No. 10, Report No. 12 (07/18/05)
19	Grid T-3	FG	05-367	106.5	3.9	87.1	81.8	
20	Grid S-3	FG	05-367	106.5	4.7	80.3	75.4	
21	Grid T-2	FG	05-367	106.5	3.8	89.5	84.0	
22	Grid U-2	FG	05-367	106.5	4.7	85.4	80.2	
23	Grid V-2	FG	05-367	106.5	4.7	87.0	81.7	
24	Grid W-2	FG	05-367	106.5	4.0	83.3	78.2	
	Topsoil Impermeable Cap Area							
25	Grid T-11	FG	05-367	106.5	7.7	82.1	77.1	
26	Grid S-11	FG	05-367	106.5	7.4	87.0	81.7	
27	Grid R-11	FG	05-367	106.5	6.5	90.5	85.0	
28	Grid Q-11	FG	05-367	106.5	7.9	82.9	77.8	
29	Grid P-11	FG	05-367	106.5	7.0	81.6	76.6	
30	Grid O-11	FG	05-367	106.5	7.6	82.8	77.7	
31	Grid N-11	FG	05-367	106.5	4.5	86.1	80.8	
32	Grid M-11	FG	05-367	106.5	3.9	86.1	80.8	
33	Grid L-11	FG	05-367	106.5	5.7	85.3	80.1	
34	Grid O-12	FG	05-367	106.5	6.5	87.0	81.7	
35	Grid P-12	FG	05-367	106.5	8.8	83.9	78.8	
36	Grid Q-12	FG	05-367	106.5	11.4	87.1	81.8	
37	Grid R-12	FG	05-367	106.5	6.8	88.7	83.3	
38	Grid S-12	FG	05-367	106.5	8.5	84.4	79.2	
39	Grid T-12	FG	05-367	106.5	6.3	86.9	81.6	
40	Grid U-12	FG	05-367	106.5	8.0	89.9	84.4	
41	Grid V-12	FG	05-367	106.5	11.0	83.3	78.2	
42	Grid W-12	FG	05-367	106.5	7.7	89.2	83.8	
43	Grid X-12	FG	05-367	106.5	5.8	89.3	83.8	

*FG = Finish Grade

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PROJECT NO.	1604.1.1
PAGE	3 OF 4

PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	26
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Don Davis	DATE	09/02/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Don Davis	DAY OF WEEK	Friday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Impermeable Cap Area	*FG						75-85% Required
44	Grid Y-12	FG	05-367	106.5	7.7	87.2	81.9	
45	Grid Z-12	FG	05-367	106.5	6.3	80.1	75.2	
46	Grid AA-12	FG	05-367	106.5	5.5	86.9	81.6	
47	Grid BB-12	FG	05-367	106.5	7.1	82.2	77.2	
48	Grid CC-12	FG	05-367	106.5	6.9	84.1	79.0	
49	Grid DD-12	FG	05-367	106.5	6.9	82.9	77.8	
50	Grid EE-12	FG	05-367	106.5	8.3	87.7	82.3	
51	Grid FF-12	FG	05-372	109.0	6.5	84.7	77.7	
52	Grid GG-12	FG	05-372	109.0	7.4	85.9	78.8	
53	Grid HH-12	FG	05-372	109.0	11.7	87.4	80.2	
54	Grid II-13	FG	05-372	109.0	11.8	85.0	78.0	
55	Grid HH-13	FG	05-367	106.5	3.4	90.5	85.0	
56	Grid GG-13	FG	05-367	106.5	4.3	84.1	79.0	
57	Grid FF-13	FG	05-367	106.5	4.7	88.4	83.0	
58	Grid EE-13	FG	05-367	106.5	3.7	80.3	75.4	
59	Grid DD-13	FG	05-367	106.5	7.6	88.8	83.4	
60	Grid CC-13	FG	05-367	106.5	5.2	83.0	77.9	
61	Grid BB-13	FG	05-367	106.5	6.8	82.7	77.7	
62	Grid AA-13	FG	05-367	106.5	7.1	82.6	77.6	
63	Grid Z-13	FG	05-367	106.5	5.9	80.8	75.9	
64	Grid Y-13	FG	05-367	106.5	6.1	90.5	85.0	
65	Grid AA-14	FG	05-367	106.5	5.3	90.4	84.9	
66	Grid BB-14	FG	05-367	106.5	5.0	86.5	81.2	
67	Grid CC-14	FG	05-367	106.5	6.9	86.4	81.1	
68	Grid DD-14	FG	05-367	106.5	4.5	85.7	80.5	
69	Grid EE-14	FG	05-367	106.5	3.8	87.0	81.7	
70	Grid FF-14	FG	05-367	106.5	3.9	84.1	79.0	
71	Grid GG-14	FG	05-367	106.5	3.0	88.4	83.0	

*FG = Finish Grade

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PROJECT NO.	1604.1.1		
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PROJECT LOCATION	Portland, Oregon	CLIENT OR OWNER	Wilder Construction Co.	REPORT SEQUENCE NO.	26
GENERAL CONTRACTOR	Wilder Construction Co.	GENERAL CONTRACTOR'S REPRESENTATIVE	Don Davis	DATE	09/02/05
GRADING CONTRACTOR	Wilder Construction Co.	GRADING FOREMAN	Don Davis	DAY OF WEEK	Friday
WEATHER	Sunny, 80's	SOURCE AND DESCRIPTION OF FILL MATERIAL	Morse Bros. Topsoil 05-372); Ross Island Topsoil (05-367	VISITORS	

TEST NO.	TEST LOCATION	ELEVATION, ft.	REFERENCE COMPACTION CURVE	MAXIMUM DRY DENSITY, lb./cu. ft.	FILL MOISTURE, %	TEST DRY DENSITY, lb./cu. ft.	% OF MAXIMUM DRY DENSITY	REMARKS
	Topsoil Impermeable Cap Area	*FG						75-85% Required
72	Grid HH-14	FG	05-367	106.5	2.8	85.4	80.2	
73	Grid FF-15	FG	05-367	106.5	3.7	80.0	75.1	
74	Grid EE-15	FG	05-367	106.5	2.6	82.7	77.7	
75	Grid DD-15	FG	05-367	106.5	3.1	82.3	77.3	

*FG = Finish Grade

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E

Soil Testing

Carlson Testing, Inc.

Main Office
P.O. Box 23814
Tigard, Oregon 97281
Phone (503) 684-3460
FAX (503) 684-0954

Salem Office
4060 Hudson Ave., NE
Salem, OR 97301
Phone (503) 589-1252
FAX (503) 589-1309

Bend Office
P.O. Box 7918
Bend, OR 97708
Phone (541) 330-9155
FAX (541) 330-9163

(SAND FROM AVERY)

May 27, 2005
T0507949.CTI

Wilder Construction Co – Mike Fry
6645 NE 78th Court – Suite C-10
Portland, OR 97218

Re: McCormack & Baxter
Sieve Analysis Testing

Gentlemen:

As requested, Carlson Testing Inc. has completed one (1) sieve analysis test conducted on a sample of light gray sand from Ross Island Sand & Gravel – Avery Pit, sampled by your representative on May 20, 2005 at the on site stockpile out of bank and delivered to our Tigard facility on the same day. Testing was completed on May 23, 2005. Project specifications applied at clients request. Following is the test results:

SIEVE ANALYSIS –ASTM C117 & C136:			
SIEVE SIZE		PERCENT PASSING	2002 ODOT SECTION 2630 SPECIFICATIONS
12.5mm	1/2"	100	----
9.5mm	3/8"	100	----
6.3mm	1/4"	100	100
4.75mm	#4	100	----
2.36mm	#8	100	----
2.00mm	#10	99	----
0.425mm	#40	59	----
0.075mm	#200	0.3	0-5

OK

This sample meets project specifications.

Test results pertain to the specific material tested/inspected only and may not be representative of other locations or elevations. Information contained herein is not to be reproduced, except in full, without prior authorization from Carlson Testing Inc.

Respectfully submitted,
CARLSON TESTING, INC.

Jason S. Bryant
Laboratory Manager

tt

The remaining sample material will be discarded in three weeks from the date the test was completed.

P:\Projects\General\2005\T0507949\Lab Work\Sieve.lablog#05-0452.DOC

Carlson Testing, Inc.

Main Office
P.O. Box 23814
Tigard, Oregon 97281
Phone (503) 684-3460
FAX (503) 684-0954

Salem Office
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Salem, OR 97301
Phone (503) 589-1252
FAX (503) 589-1309

Bend Office
P.O. Box 7918
Bend, OR 97708
Phone (541) 330-9155
FAX (541) 330-9163

(SAND FROM AVERY)

Moisture - Density Relationship

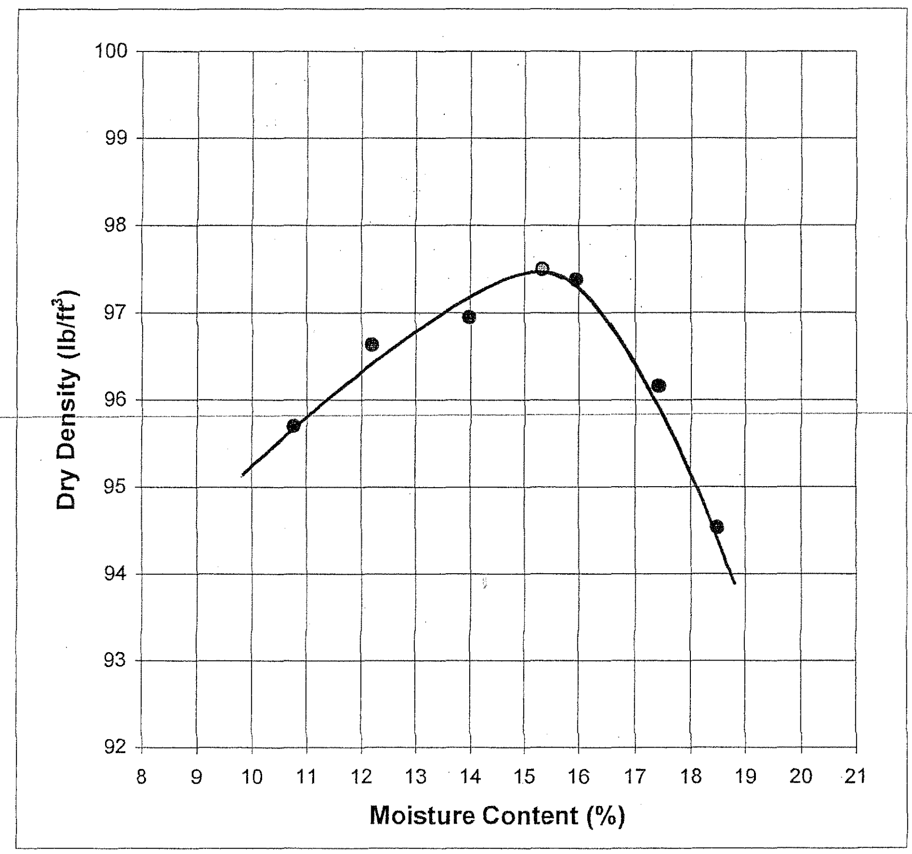
Client: Wilder Construction Co - Mike Fry
Project: McCormack & Baxter

05/26/05

Job Number: T0507949

Material Type: Lt. Gray Sand From Ross Island Sand & Gravel - Avery Pit
Location: On Site Stockpile Out of Bank

Test Method:	ASTM D-698 A, C-136, D-2216	**Date Sampled:**	05/20/05
Sample Method:	ASTM D-75	**Date Tested:**	05/23/05
Preparation Method:	Moist	**Oversized Material:**	Removed
Compacting Method:	Manual	**Hammer Type:**	Circular



OK

Zero Air Voids Line = 2.500

Optimum Moisture: $\boxed{15.3\%}$ **Max. Dry Density:** $\boxed{97.5}$ **lbs/ft^3**

Percent Passing #4 Sieve: 99.8%

tt
CC:

Reviewed By:
Jason S. Bryant - Laboratory Manager

**The remaining sample material will be discarded in three weeks from the date the test was completed.*

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503/682-2753

(SAND FROM AVERY)

TECHNICAL REPORT

Report To: Mr. Jason S. Bryant
Carlson Testing
P.O. Box 23814
Tigard, Oregon 97281

Date: 6/3/05

Lab No.: 05-206

Project: Laboratory Testing
Project No. T0507949

Project No.: 1268.1.1

Report of: Constant head permeability of granular soil.

Sample Identification

NTI received one sample delivered to our laboratory on May 30, 2005 by a Carlson Testing representative. As requested, we have determined the permeability in general accordance with ASTM methods. The sample was remolded to 90% of relative density as requested. Our laboratory's test results are summarized on the following table.

Laboratory Test Results

Sample No. 050506, Medium to Fine Sand (Dry density of sample tested 87.7 pcf)

Constant Head Permeability (ASTM D2434) ✓			
Test No.	Hydraulic Gradient	Permeability (k_{20}, cm/s)	Average Permeability (k_{20}, cm/s)
1	0.82	0.022	0.021 ✓ ok
2	0.68	0.025	
3	0.49	0.025	
4	0.33	0.018	
5	0.09	0.016	

SPEC, PER CO#1
1×10^{-2} cm/s (0.01) MINIMUM

Copies: Addressee (facsimile only)

 REVIEWED BY: Bridgett Adame

(TOP SOIL FROM AVERY)

Carlson Testing, Inc.

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Bend Office
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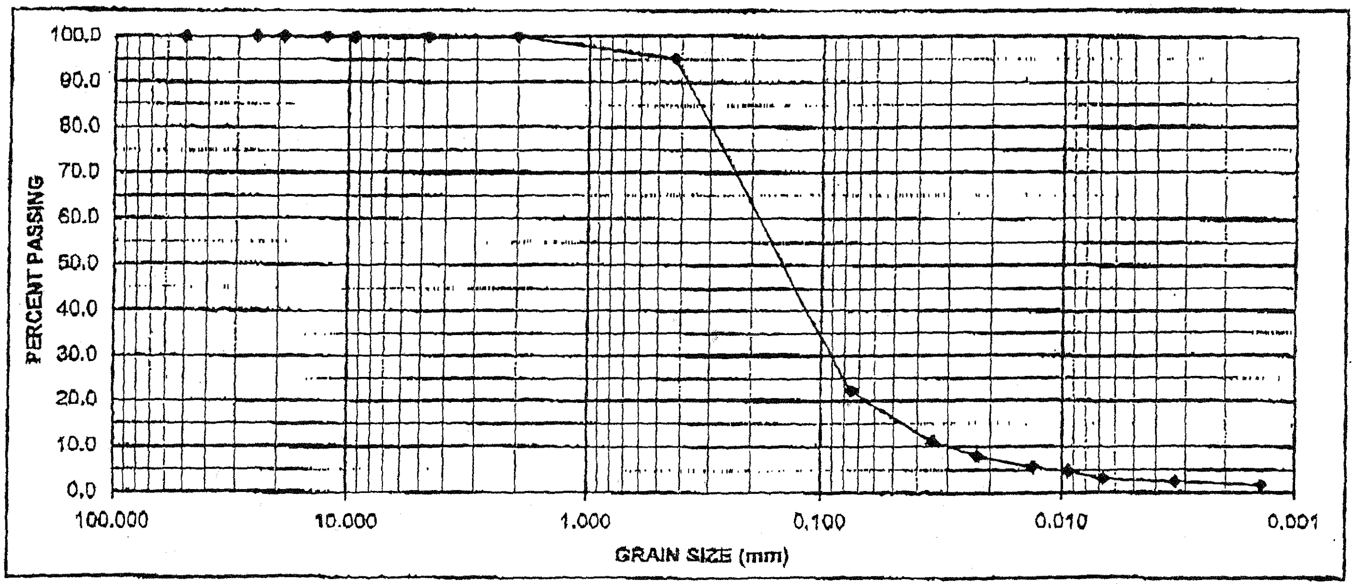
Phone (541) 330-9155
FAX (541) 330-9163

Client:	Ross Island Sand & Gravel	Job Number:	T0507917.CTI
Project:	2005 Miscellaneous-McCormick & Baxter	Sampled By:	Client
Sample Description:	Topsoil	Date Sampled:	6/13/2005
Sample Identification:	1	Date Received:	6/13/2005
Sample Location:	Stockpile	Date Tested:	6/16/2005
Lab Log Number:	05-0537	Tested By:	Tonya Bell

ASTM D422-Particle Size Analysis

SIEVE ANALYSIS			
Sieve Size, US Standard	Sieve Size, mm	Cumulative % Retained	Cumulative % Passing
2"	50.0	0.0	100.0
1"	25.0	0.0	100.0
3/4"	19.0	0.0	100.0
1/2"	12.5	0.0	100.0
3/8"	9.5	0.0	100.0
#4	4.75	0.0	100.0
#10	2.00	0.0	100.0
#40	0.425	4.7	95.3
#200	0.075	78.0	22.0

HYDROMETER ANALYSIS	
Diameter, mm	% Finer
0.0348	11.1
0.0225	7.9
0.0132	5.5
0.0094	4.7
0.0067	3.2
0.0033	2.4
0.0014	1.6



(1) Gravel, passing 3in and retained on No.4 sieve:	0.0
(2) Sand, passing No.4 and retained on No.200 sieve:	78.0
a. Coarse sand, passing No.4 and retained on No.10 sieve:	0.0
b. Medium sand, passing No.10 and retained on No.40:	4.7
c. Fine sand, passing No.40 and retained on No.200 sieve:	73.3
(3) Silt size, 0.074mm to 0.005mm:	19.2
(4) Clay size, 0.005mm to 0.001mm:	1.3
Colloids, smaller than 0.001mm:	1.4

Percent Passing		Specs
0.074mm:	22	70-80
0.005mm:	3	10-30
0.001mm:	1	0-10

Tested in accordance with stated procedures with equipment in current calibration by: Tonya Bell

Reviewed By: Jason S. Bryant, Lab Manager

Date: June 20, 2005

Carlson Testing, Inc.

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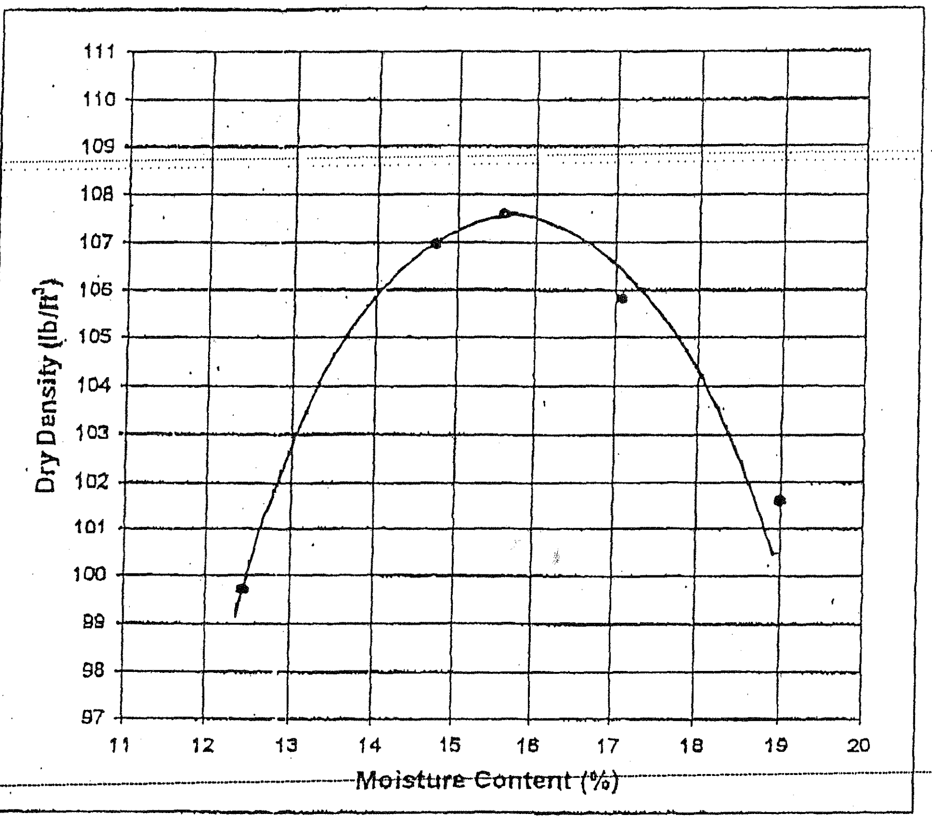
Moisture - Density Relationship (TOPSOIL FROM AVERY)

Client:	Pacific Northwest Aggregates Inc		03/04/03
Project:	Pacific Northwest Aggregates Inc - 2003 Misc.	Job Number:	T0302622
Material Type:	Topsoil	Location:	On-Site

Test Method:	ASTM D-698 A, C-136, D-2216	Date Sampled:	02/24/03
Sample Method:	ASTM D-75	Date Tested:	02/27/03
Preparation Method:	Moist	Oversized Material:	Removed
Compacting Method:	Manual	Hammer Type:	Circular

MAR 10 2003



Zero Air Voids Line = 2.900

Optimum Moisture: $\boxed{15.6\%}$ Max. Dry Density: $\boxed{107.6}$ lbs/ft^3

Percent Passing #4 Sieve: 98.6%

Reviewed By: ______________________

A & L WESTERN AGRICULTURAL LABORATORIES

PORTLAND OFFICE • 503-968-9225
10220 S.W. Nimbus Ave., Bldg. K-9 • Portland, OR 97223

REPORT NUMBER
05-140-116

Client No: 99999

SEND TO: ECOLOGY AND ENVIRONMENT INC
2101 FOURTH AVE STE 1900
SEATTLE, WA 98121

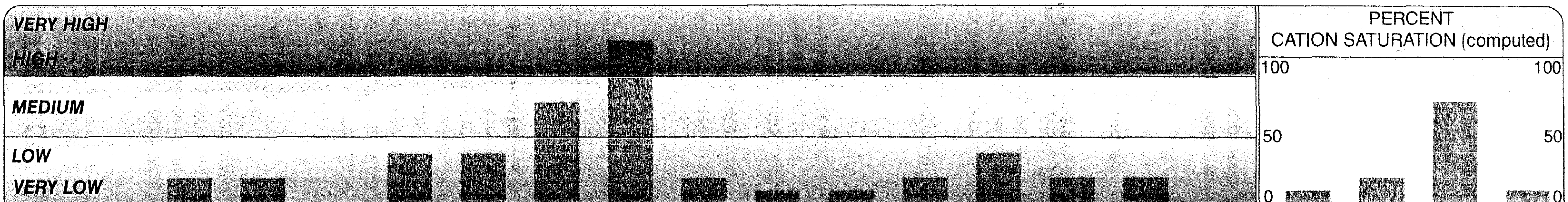
GROWER: 16880Y142503

SUBMITTED BY: CHAD NANCARROW

(TOPSOIL FROM AVERY)

GRAPHICAL SOIL ANALYSIS REPORT

DATE OF REPORT: 05/24/2005 LAB NO: 58914 SAMPLE ID: TSOIL PAGE: 1



RATING	ORGANIC MATTER %	NITROGEN NO3-N ppm	PHOSPHORUS WEAK BRAY ppm	PHOSPHORUS NaHCO3-P ppm	POTASSIUM K ppm	MAGNESIUM Mg ppm	CALCIUM Ca ppm	SODIUM Na ppm	SULFUR SO4-S ppm	ZINC Zn ppm	MANGANESE Mn ppm	IRON Fe ppm	COPPER Cu ppm	BORON B ppm		POTASSIUM K %	MAGNESIUM Mg %	CALCIUM Ca %	SODIUM Na %
TEST RESULTS	0.8	6	5	6	96	303	2528	27	1	0.2	1	9	0.3	0.3		1.6	16.1	81.6	0.6

ECe dS/m	INCREASING SALINITY (LOW / AVERAGE / HIGH)	CEC meq/100g	EX. LIME	pH	INCREASING NEED FOR LIME (ACIDIC / BASIC)
0.3		15.5	H	8.0	

SANDY LOAM

Weak Bray P unreliable at M or H excess lime or pH > 7.5

SOIL FERTILITY GUIDELINES

CROP: NATIVE GRASS RATE: lb/acre

DOLOMITE (100 score)	LIME (100 score)	GYPSUM	ELEMENTAL SULFUR	NITROGEN N	PHOSPHATE P2O5	POTASH K2O	MAGNESIUM Mg	SULFUR SO4-S	ZINC Zn	MANGANESE Mn	IRON Fe	COPPER Cu	BORON B	REFER TO BACK
			1200	70	100	180			10	10		10	1.0	ALL

COMMENTS

ACIDIFICATION of high pH soils should improve soil environment. Compare different sources of acidifying materials, but be aware that sulfate-sulfur (as shown on report) has NO acidifying power.
REVEGETATION should preferably be conducted on soils with a pH above 6.5 but below 7.5 and more than 2% organic matter. A minimum of 30 lb N/acre (15 ppm NO3-N) should be available at planting.
IDEALLY, fertilize just before the first germinating rain if irrigation is not available. For maximum economic return, one should probably not fertilize more than once every two years.
ORGANIC MATTER: Low levels may restrict beneficial microbial activity and lead to soil compaction and erosion. Consider the inclusion of compost and/or cover crops if a concern.

Darcy T. Peebles
DARCY PEEBLES, CCA

A & L WESTERN LABORATORIES, INC.

A & L WESTERN AGRICULTURAL LABORATORIES

10220 S.W. Nimbus Ave., Bldg K-9 • Portland, OR 97223 • Ph: (503) 968-9225

05-140-116
REPORT NUMBER

Client No: 99999

ECOLOGY AND ENVIRONMENT INC
2101 FOURTH AVE STE 1900
SEATTLE, WA 98121

Grower: 16880Y142503

Submitted by: CHAD NANCARROW

Date: 05/24/2005

Page 1

Soil Physical Characteristics (TOPSOIL FROM AVERY)

Sample Number	Lab Number	% Sand	% Silt	% Clay	Soil Texture	Moisture @ 1/3 Bar	Moisture @ 15 Bar	Available Water %
TSOIL	58914	71	18	10	~~LOAMY SAND~~ SANDY LOAM			

A & L WESTERN AGRICULTURAL LABORATORIES, INC.

Darcy L. Peebles

DARCY PEEBLES, CCA

A & L WESTERN AGRICULTURAL LABORATORIES

REPORT NUMBER 05-223-115

PORTLAND OFFICE • 503-968-9225
10220 S.W. Nimbus Ave., Bldg. K-9 • Portland, OR 97223
Client No: 99999

SEND TO: ECOLOGY & ENVIRONMENT INC
333 SW 5TH AVE STE 608
PORTLAND, OR 97204-

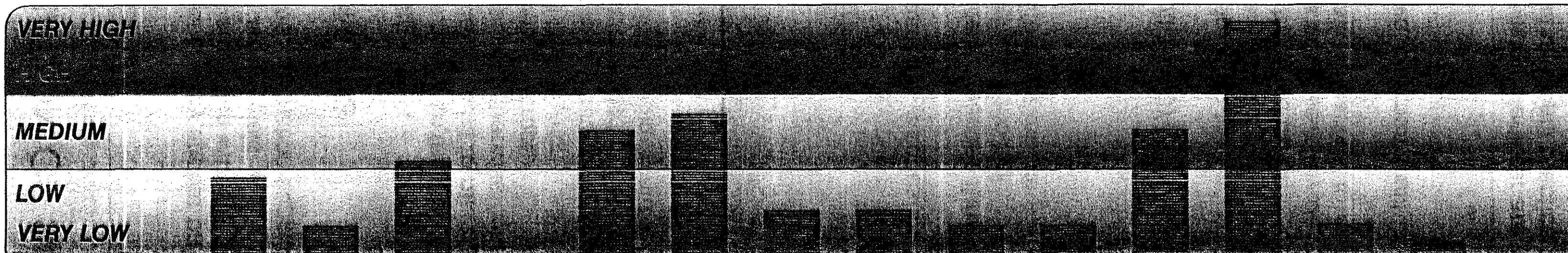
GROWER:

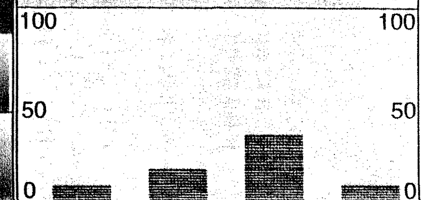
SUBMITTED BY: BRYAN CIECKO
Delayed in Reporting
Due to Recheck

GRAPHICAL SOIL ANALYSIS REPORT

(TOPSOIL FROM EXISTING STOCKPILE)

DATE OF REPORT: 08/19/2005 LAB NO: 58081 SAMPLE ID: MBTS1 PAGE: 1





RATING	ORGANIC MATTER %	NITROGEN NO_3-N ppm	PHOSPHORUS WEAK BRAY ppm	PHOSPHORUS $NaHCO_3$-P ppm	POTASSIUM K ppm	MAGNESIUM Mg ppm	CALCIUM Ca ppm	SODIUM Na ppm	SULFUR SO_4-S ppm	ZINC Zn ppm	MANGANESE Mn ppm	IRON Fe ppm	COPPER Cu ppm	BORON B ppm		POTASSIUM K %	MAGNESIUM Mg %	CALCIUM Ca %	SODIUM Na %
TEST RESULTS	2.3	6	19	16	137	180	805	34	3	0.3	8	45	0.2	0.1		4.3	18.3	49.6	1.8

ECe dS/m (LOW – AVERAGE – HIGH; INCREASING SALINITY →)	CEC meq/100g	EX. LIME	pH (ACIDIC – BASIC; ← INCREASING NEED FOR LIME)
0.2	8.1	L	5.5

NaHCO3-P unreliable at this soil pH

BUFFER pH: 6.3

SOIL FERTILITY GUIDELINES

CROP: NATIVE GRASS RATE: lb/acre

DOLOMITE (100 score)	LIME (100 score)	GYPSUM	ELEMENTAL SULFUR	NITROGEN N	PHOSPHATE P_2O_5	POTASH K_2O	MAGNESIUM Mg	SULFUR SO_4-S	ZINC Zn	MANGANESE Mn	IRON Fe	COPPER Cu	BORON B	REFER TO BACK
	6000			60	70	90		20	10			10	2.0	ALL

COMMENTS

REVEGETATION should preferably be conducted on soils with a pH above 6.5 but below 7.5 and more than 2% organic matter. A minimum of 30 lb N/acre (15 ppm NO3-N) should be available at planting.
IDEALLY, fertilize just before the first germinating rain if irrigation is not available. For maximum economic return, one should probably not fertilize more than once every two years.
BORON: Aim for soil levels above 0.5 ppm to avoid a deficiency. A tissue analysis at the appropriate ti[me] will determine more accurately, plant availability. ADD BORON WITH CAUTION.
AMMONIUM AND UREA fertilizers applied directly after liming may lead to some volatilization of nitrogen. Keep this in mind when timing operations. Maintain calcium above 1000 ppm.

Darcy Peebles
DARCY PEEBLES, CCA

A & L WESTERN LABORATORIES, INC.

06/20/2005 14:47 5033971973 MBI DEER ISLAND PAGE 02

(1½" – 0 Base Agg.)

MORSE BROS., INC
QA/QC DIVISION

AGGREGATE SAMPLE BENCH SHEET

LAB ID #:
PRODUCT NAME: 1½ – 0 Agg. Base
PRODUCT CODE: 2020 - 1,500 - 00000 - 001

PROJECT NAME: Various	DATE SAMPLED: 6-20-05	___ LIGHT RAIN ___ HEAVY RAIN X DRY	
PROJECT #: Various	TIME SAMPLED: 8:00	AMT. REPRESENTED: ☐ MG ☒ TON 1500	
PLANT ID: 20 (26-018-1)	SAMPLED AT: P. Belt	FEEDER RATE:	TONNAGE SUMMARY: PASSING INCORP.
PRODUCT SOURCE NAME: Angell Quarry	SAMPLED BY: SA	ARCHIVE: ☐ YES ☒ NO	REJECT FAILING INCORP.
MBI LOT/SUBLOT:	DATE RECIEVED: 6-20-05	BLENDING SOURCES: % OTHER ___ % NATURAL ___ % CRUSHED ___	
AGENCY LOT/SUBLOT:	TIME RECEIVED: 8:00	SAMPLE TYPE: ODOT PC / MBI PC / MISC / CHECK	

SIEVE ANALYSIS ☒ DRY T-27 ☐ WET T-11/27 ☐ QUICK SHAKE — FRACTURED PIECES TM 213 — ELONGATED PIECES

SIEVE SIZE	SPEC LIMITS	MASS 1	MASS 2	TOTAL MASS	% RET	% PASS	ACC. RET	TEST MASS	FRAC MASS	1FACE%	2FACE%	SPECS	TEST MASS	ELONG MASS	FLAT MASS
	OSHD														
	2630.10														
2"	100	0		0	0	100									
1½	95-100	0		0	0	100									
1"	-	2447.3			12.9	87									
3/4	55-75	3404.3			18.0	69									
1/2"	-	3543.8			18.7	50									
3/8"	-	—		—	—	—									
1/4"	35-50	2320.5			12.3	38									
#10	-	4061.3			21.5	17									
PAN	-	3120.8			16.5										

MOISTURE = {(A - B) / (B - T)} x 100	SUM OF SIEVES (F) = 18898.0	FM TM 771	SE T 176	REMARKS:
WET AGG + PAN A =	INITIAL DRY WT (G) = 18906.7	D & C TM 226	1 3.6/5.3 = 68	
DRY AGG + PAN B =	POST WASH WT (H) =	ELONG. TM 229	2	
PAN TARE T =	WASH LOSS (I) (G - H) =	WOOD TM 225	3	
MOISTURE =	WASH LOSS % (I / G) x 100 =	2.00mm / 6.3mm 45 45-60	AVG. 68 ≥ 30	
OTHER:	ERROR RATE % [(H - F) / H] x 100 = 0.05%	CLEAN TM 227	OTHER:	Revision Date: 12/04/97

ecology and environment, inc.
International Specialists in the Environment

Portland Office
333 SW Fifth Avenue, Suite 608
Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Technical Memorandum

To: Kevin Parrett, Project Manager (DEQ) -- McCormick and Baxter Superfund Site

Date: June 18, 2004

From: Erin Lynch, Task Order Manager (E & E)

Subject: Chemical Analyses of Import Topsoil and Sand

Introduction

Ecology and Environment, Inc., (E & E) under contract to the Oregon Department of Environmental Quality (DEQ) (Task Order No. 71-03-12), collected samples and performed chemical analysis of Remtech's (DEQ's contractor for the McCormick and Baxter sedaiment cap construction) proposed sources of import topsoil and sand to be used for the upland soil cap, sediment cap bank cap and sediment cap sand layer at the McCormick & Baxter Superfund Site in Portland, Oregon.

The proposed source of topsoil is the overburden of a recently permitted gravel quarry owned by Morse Brothers, Inc. The site is approximately four miles north of St. Helens, Oregon and adjacent to Highway 30. The site is known as the Reichhold Quarry. This site has historically been used as a pasture. Earlier use may have included light agricultural production. Based on past use, the site soil is not expected to have significant levels of pollutants.

The proposed source of sand is an existing stockpile of Columbia River Navigational Channel maintenance dredge spoils located at the Port of St. Helens. The material was previously dredged by the Port of St. Helens from the Upper Martin Island Bar. E & E's understanding is that the dredge site is located on Port of St. Helens property between river miles 80 and 85 and centered on river mile 82.8 in the vicinity of St. Helens, Oregon. E & E is awaiting confirmation of this location from Remtech. The site is formally known as Disposal Site Upper Martin Island Bar, O-82.8. The sand will be supplied by Morse Brothers, Inc. A copy of the dredge and disposal permits for this material is provided in Remtech's Draft Construction Operations Plan (April 2004). The U.S. Army Corp of Engineers has extensive chemical and physical data on the Columbia River Navigational Channel with respect to maintenance dredge material. This material is primarily medium to coarse sand with very low organic carbon and very few fines. These data as well as the mechanism for filling the navigational channel (i.e., primarily sand wave formation) support the conclusion that the navigational channel maintenance dredge spoils are not expected to have significant levels of pollutants.

The purpose of sampling and chemical analysis of the proposed topsoil and sand was to verify that these materials do not contain pollutants that would render the material unsuitable for use at the McCormick & Baxter site.

Sampling Procedures

The Port of St. Helens dredge sand consisted of a single stockpile estimated to contain 112,000 cubic yards of material. The stockpile was divided into quadrants for sampling purposes. Quadrants were labeled A, B, C, and D where A represents the southeast quadrant and subsequent samples were collected in alphabetical order in a counterclockwise direction. A boring was hand augured in each quadrant to a depth of approximately 3 feet, below ground surface (bgs). Samples were collected in one-foot depth intervals. The samples collected from an individual hole were then composited and placed in appropriate sample jars. The sample jars were placed on ice in a cooler. Samples for VOC analysis were not composited, rather discrete grab samples were collected from 1 foot, bgs. Samples were labeled SH-A-042204, SH-B-042204, SH-C-042204, and SH-D-042204 where SH indicates the St. Helens stockpile, A indicates the quadrant, and 042204 indicates the sampling date.

The Morse Brothers, Inc. quarry topsoil was sampled by hand augering holes in the center of four equal areas starting from the northwest corner of the property and working toward the southeast in an arc. Each area was labeled 1 through 4, where 1 represents the northwest area and subsequent samples were collected in numerical order toward the southeast. A boring was hand augered in each area to a depth of approximately 3 feet, bgs. Samples were collected in one-foot depth intervals. The samples collected from an individual hole were then composited and placed in appropriate sample jars The sample jars were placed on ice in a cooler. Samples for VOC analysis were not composited, rather discrete grab samples were collected from 1 foot, bgs. Samples were labeled MB-1-042204, MB-2-042204, MB-3-042204, and MB-4-042204 where MB indicates Morse Brothers topsoil, 1 indicates the sampling area, and 042204 indicates the sampling date.

All samples were analyzed for metals (arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, zinc, and mercury), volatile organic compounds (VOCs) by EPA Method 8260B, semivolatile organic compounds (SVOCs) by EPA Method 8270C, pesticides by EPA Method 8081 and 8141, herbicides by EPA Method 8151, Northwest Total Petroleum Hydrocarbons – gasoline (NWTPH-Gx), and Northwest Total Petroleum Hydrocarbons – diesel (NWTPH-Dx) at STL Laboratories in Tacoma, Washington. In addition, a single sample from each site was analyzed for dioxin/furan (SH-A-042204 and MB-2-042204).

Comparison to Reference Levels

Analytical results were compared to a suite of reference levels indicative of “Clean Fill” as defined by OAR 340-093-0030(13):

- Cleanup goals for sediment from the McCormick and Baxter, Record of Decision (EPA 1996);
- EPA Region 9 Preliminary Remedial Goals (PRGs) for both residential and industrial soils (EPA 2002);

- DEQ Guidance for Ecological Risk Assessment Level II Screening Level Values for Freshwater Sediment (Ecological Risk Assessment Level II Screening Value) (DEQ 2001);
- DEQ Suggested Default Background Concentrations for Inorganic Contaminants for Freshwater Sediment (DEQ 2002); and
- Ecological threshold concentrations for bulk sediment derived for the E & E technical memorandum to DEQ dated January 16, 2004, Response to Hart Crowser, Inc. Comment on Sediment Cap Basis of Design (E & E 2003)

These "protective levels" are provided in Table 1.

As shown in Tables 2 and 3, several organic contaminants were detected in either the topsoil or sand: Lindane (0.4 ug/kg), toluene (1.4 ug/kg), xylene (2.2 ug/kg), benzoic acid (421 ug/kg), fluoranthene (18.7 ug/kg) and dioxin/furan (0.68 pg TEQ/g). Additionally, a number of PAHs were detected in sand sample SH-A-042204: LPAHs (0 ug/kg), HPAHs (87 ug/kg), CPAHs (44.3 ug/kg), and Total PAHs (133.3 ug/kg). No organic contaminants were detected in either the topsoil or sand that exceeded any of the reference levels.

As shown in Table 2, one sample slightly exceeded the DEQ Ecological Risk Assessment Level II Screening Level for arsenic, and several samples contained lead and zinc that slightly exceeded the DEQ Suggested Default Background Concentrations for Metals for Freshwater Sediment.

Arsenic slightly exceeded the Ecological Risk Assessment Level II Screening Value of 6 mg/kg in MB-1-042204 (6.11 mg/kg) from the topsoil. In addition, the arsenic detection of 6.11 mg/kg did not exceed any of the other "protective levels" including the DEQ suggested default background concentration for arsenic of 7.9 mg/kg. This detection of 6.11 mg/kg is believed to be representative of background concentrations for arsenic.

All samples exceeded the DEQ suggested default background concentration for lead of 2 mg/kg. Concentrations of lead range from 2.4 mg/kg to 5.4 mg/kg in the sand (Table 2). Concentrations of lead range from 5.8 mg/kg to 7.7 mg/kg in the topsoil (Table 2). Although lead concentrations exceeded the DEQ Default Background Concentration, detections are two and three orders of magnitude less than the EPA PRGs for lead and the Ecological Risk Assessment Level II Screening Value for lead. In addition, lead concentrations were detected in all samples regardless of location within the sand pile or within the topsoil, indicating a point source for lead is not likely and detections likely represent background concentrations.

One of the sand samples (SH-A-042204, 57.4 mg/kg, Table 2) slightly exceeded the zinc concentration (53 mg/kg) set in the DEQ suggested default background concentrations. All samples from the topsoil slightly exceeded the same zinc level. Concentrations of zinc in these samples range from 62.3 mg/kg to 69.8 mg/kg. All zinc detections are several orders of magnitude below EPA PRGs for zinc and are well below the Ecological Risk Assessment Level II Screening Value for zinc. The detections of zinc are believed to represent background concentrations.

Summary and Recommendation

Four samples from a dredge sand stockpile at the Port of St. Helens and four topsoil samples from the Morse Brothers quarry near St. Helens, Oregon were collected and analyzed for metals, VOCs, SVOCs, pesticides, herbicides, and total petroleum hydrocarbons. One sample from each material was analyzed for dioxin/furan. Results of laboratory analyses indicate that VOCs, SVOCs, pesticides, herbicides, total petroleum hydrocarbons and dioxin are not present at levels of concern in the proposed sand and topsoil, although laboratory analysis revealed trace levels of Lindane, toluene, xylene, fluoranthene, benzoic acid, PAHs, and dioxin/furan. Laboratory analyses indicated that of the 10 metals evaluated only lead and zinc slightly exceeded the DEQ Suggested Default Background Concentrations for Metals in Freshwater Sediment and that arsenic slightly exceeded the DEQ Ecological Screening Level Values.

An E & E chemist provided a quality assurance/quality control data summary check. Data validation memoranda are attached as an Appendix.

Based on the history of the topsoil and sand and a comparison of analytical results to a suite of reference levels, E & E believes that both the St. Helens dredge sand and the Morse Brothers topsoil meet the OAR definition of clean fill, and we recommend that these materials be approved for use at the McCormick and Baxter site.

If you have any questions regarding the information presented in this Technical Memorandum, please contact either John Montgomery or Erin Lynch at (503) 248-5600.

References:

Ecology and Environment, Inc. (E & E), January 2003, Response to Hart Crowser, Inc. Comment on Sediment Cap Basis of Design, McCormick and Baxter Creosoting Company Site, Portland, Oregon, Technical Memorandum to DEQ.

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Remtech, April 2004, Draft Construction Operations Plan, McCormick and Baxter Creosoting Company Portland, Oregon, Sediment Cap.

United States Environmental Protection Agency, October 1, 2002c, Region 9 Preliminary Remediation Goals, prepared by Stanford J. Smucker, Ph.D., San Francisco, California.

_____, March 1996, Record of Decision (ROD), McCormick and Baxter Creosoting Company, Portland Plant, Portland, Oregon.

<u>Attachments:</u>

Table 1: Summary of Protective Values
Table 2: Inorganic and Organic Analytical Results
Table 3: Dioxin/Furan Analytical Results
Appendix: Data Validation Memoranda

Table 1. Summary of Cleanup Goals and Limitations
McCormick and Baxter Creosoting Company
Portland, Oregon

Compound	EPA Record of Decision (1996) Cleanup Goals for Sediment (mg/kg, dry weight)	EPA Region 9 Preliminary Remediation Goals (PRGs)				Oregon DEQ (2001) Guidance for Ecological Risk Assessment Level II Screening Level Values		Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment		Ecology and Environment, Inc. (January 16, 2003) Technical Memorandum to Oregon DEQ Response to Hart Crowser Inc., Comment on Sediment Cap Basis of Design		
		Residential Soil (ug/kg)	Residential Soil (mg/kg)	Industrial Soil (ug/kg)	Industrial Soil (mg/kg)	(ug/kg)	(mg/kg)	(ug/kg)	(mg/kg)	Ecological ('92 & '99/'01 Data) (ug/kg - dry weight)	Ecological ('99/'01 Data) (ug/kg - dry weight)	Human Health (ug/kg)
Inorganics												
Arsenic	12	22,000	22	260,000.00	260	6000	6	7,900	7.9	--	--	12,000
Cadmium	--	37,000	37	450,000.00	450	600	0.6	<500	<0.5	--	--	--
Chromium	--	100,000,000	100,000	100,000,000.00	100,000	52000	52	30,000	30	--	--	--
Copper	--	3,100,000	3,100	41,000,000.00	41,000	19000	19	12,000	12	--	--	--
Lead	--	400,000	400	750,000.00	750	30000	30	2,000	2	--	--	--
Mercury	--	23,000	23	310,000.00	310	100	0.1	200	0.2	--	--	--
Nickel	--	1,600,000	1,600	20,000,000.00	20,000	18000	18	20,000	20	--	--	--
Silver	--	390,000	390	5,100,000.00	5,100	4500	4.5	400	0.4	--	--	--
Selenium	--	390,000	390	5,100,000.00	5,100	--	--	400	0.4	--	--	--
Zinc	--	23,000,000	23,000	100,000,000.00	100,000	123000	123	53,000	53	--	--	--
Organics												
Acetone	--	1,600,000	1,600	6,000,000	6,000	--	--	--	--	--	--	--
Acenaphthene	--	3,700,000	3,700	29,000,000	29,000	290,000	290	--	--	23,333	500	--
Acenaphthylene	--	--	--	--	--	160,000	160	--	--	23,333	500	--
Aldrin	--	29	0.029	100	0.1	40,000	40	--	--	--	--	--
Anthracene	--	22,000,000	22,000	100,000,000	100,000	57,000	57	--	--	23,333	500	--
Benzene	--	600	0.6	1,300	1.3	--	--	--	--	--	--	--
Benzo[a]anthracene	--	620	0.62	2,100	2.1	32,000	32	--	--	9,000	275	286
Benzo[b&k]fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--
Benzo[b]fluoranthene	--	--	--	--	--	--	--	--	--	9,000	275	286
Benzo[k]fluoranthene	--	--	--	--	--	27,000	27	--	--	9,000	275	286
Benzo[a]pyrene	--	62	0.062	210	0.21	32,000	32	--	--	3,000	115	286
Benzo[g,h,i]perylene	--	N/A	N/A	N/A	N/A	300,000	300	--	--	9,000	275	--
Benzoic acid	--	100,000,000	100,000	100,000,000	100,000	--	--	--	--	--	--	--
Benzyl alcohol	--	18,000,000	18,000	100,000,000	100,000	--	--	--	--	--	--	--
BHC (beta)	--	320	0.32	1,300	1.3	--	--	--	--	--	--	--
BHC (gamma) Lindane	--	440	0.44	1,700	1.7	900	0.9	--	--	--	--	--
BHC (technical)	--	320	0.32	1,300	1.3	100,000	100	--	--	--	--	--
Bis(2-ethylhexyl)phthalate (DEHP)	--	35,000	35	120,000	120	750,000	750	--	--	--	--	--
Butyl benzyl phtahalate	--	12,000,000	12,000	100,000,000	100,000			--	--	--	--	--
Carbazole	--	24,000	24	86,000	86	140,000	140	--	--	--	--	--
Carbon tetrachloride	--	250	0.25	550	0.55			--	--	--	--	--
Chlordane	--	1,600	1.6	6,500	6.5	4,500	4.5	--	--	--	--	--
Chlordane (alpha)	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	--	3,600	3.6	12,000	12	--	--	--	--	--	--	--
Chrysene	--	62,000	62	21,000	21	57,000	57	--	--	9,000	275	286
DDD	--	2,400	2.4	10,000	10	4,000	4	--	--	--	--	--
DDE	--	1,700	1.7	7,000	7	1,500	1.5	--	--	--	--	--
DDT	--	1,700	1.7	7,000	7	4,000	4	--	--	--	--	--
DDT (Total)	--	--	--	--	--	7,000	7	--	--	--	--	--
Dibenzo[a,h]anthracene	--	62	0.062	210	0.21	33,000	33	--	--	9,000	275	286
Dibenzofuran	--	290,000	290	3,100,000	3,100	5,100,000	5100	--	--	--	--	--
Di-n-butyl phthalate	--	--	--	--	--	110,000	110	--	--	--	--	--
1,2-Dichlorobenzene	--	370,000	370	370,000	370	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	16,000	16	63,000	63	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	3,400	3.4	7,900	7.9	--	--	--	--	--	--	--

Table 1. Summary of Cleanup Goals and Limitations
McCormick and Baxter Creosoting Company
Portland, Oregon

Compound	EPA Record of Decision (1996) Cleanup Goals for Sediment (mg/kg, dry weight)	EPA Region 9 Preliminary Remediation Goals (PRGs)				Oregon DEQ (2001) Guidance for Ecological Risk Assessment Level II Screening Level Values		Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment		Ecology and Environment, Inc. (January 16, 2003) Technical Memorandum to Oregon DEQ Response to Hart Crowser Inc., Comment on Sediment Cap Basis of Design		
		Residential Soil (ug/kg)	Residential Soil (mg/kg)	Industrial Soil (ug/kg)	Industrial Soil (mg/kg)	(ug/kg)	(mg/kg)	(ug/kg)	(mg/kg)	Ecological ('92 & '99/'01 Data) (ug/kg - dry weight)	Ecological ('99/'01 Data) (ug/kg - dry weight)	Human Health (ug/kg)
Organics												
1,1-Dichloroethylene	--	120,000	120	410,000	410	--	--	--	--	--	--	--
1,2-Dichloroethane	--	280	0.28	600	0.6	--	--	--	--	--	--	--
1,2-Dichloroethylene	--	43,000	43	150,000	150	--	--	--	--	--	--	--
Dieldrin	--	30	0.03	110	0.11	3,000	3	--	--	--	--	--
Diethyl phthalate	--	49,000,000	49,000	100,000,000	100,000	--	--	--	--	--	--	--
2,4-Dimethylphenol	--	1,200,000	1,200	12,000,000	12,000	--	--	--	--	--	--	--
Dimethyl phthalate	--	100,000,000	100,000	100,000,000	100,000	--	--	--	--	--	--	--
Di-n-octyl phthalate	--	24,000,000	24,000	25,000,000	25,000	--	--	--	--	--	--	--
1,4-Dioxane	--	44,000	44	160,000	160	--	--	--	--	--	--	--
Endosulfan	--	370,000	370	3,700,000	3,700	--	--	--	--	--	--	--
Endrin	--	18,000	18	180,000	180	3,000	3	--	--	--	--	--
Ethanol	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	--	19,000,000	19,000	37,000,000	37,000	--	--	--	--	--	--	--
Ethylbenzene	--	8,900	8.9	20,000	20	--	--	--	--	--	--	--
Fluoranthene	--	2,300,000	2,300	22,000,000	22,000	111,000	111	--	--	9,000	275	--
Fluorene	--	2,700,000	2,700	26,000,000	26,000	77,000	77	--	--	23,333	500	--
Formaldehyde	--	9,200,000	9,200	100,000,000	100,000	--	--	--	--	--	--	--
gamma-BHC (lindane)	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	110	0.11	380	0.38	10,000	10	--	--	--	--	--
Heptachlor epoxide	--	53	0.053	190	0.19	600	0.6	--	--	--	--	--
Hexachlorobenzene (HCB)	--	300	0.3	1,100	1.1	100,000	100	--	--	--	--	--
Hexachlorobutadiene	--	6,200	6.2	22,000	22	--	--	--	--	--	--	--
Hexachloroethane	--	35,000	35	120,000	120	--	--	--	--	--	--	--
Indeno[1,2,3-cd]pyrene	--	620	0.62	2,100	2.1	17,000	17	--	--	9,000	275	286
Kepone (Chlordecone)	--	61	0.061	220	0.22	--	--	--	--	--	--	--
Methanol	--	31,000,000	31,000	100,000,000	100,000	--	--	--	--	--	--	--
Methoxychlor	--	310,000	310	3,100,000	3,100	--	--	--	--	--	--	--
Methyl ethyl ketone	--	7,300,000	7,300	27,000,000	27,000	--	--	--	--	--	--	--
Methylene chloride	--	9,100	9.1	21,000	21	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol (o-cresol)	--	3,100,000	3,100	31,000,000	31,000	--	--	--	--	--	--	--
4-Methylphenol (p-cresol)	--	310,000	310	3,100,000	3,100	--	--	--	--	--	--	--
4-Methyl-2-pentanone	--	--	--	--	--	--	--	--	--	--	--	--
Mirex	--	270	0.27	960	0.96	800,000	800	--	--	--	--	--
Naphthalene	--	56,000	56	190,000	190	176,000	176	--	--	23,333	500	--
Nitrobenzene	--	20,000	20	100,000	100	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	99,000	99	350,000	350	--	--	--	--	--	--	--
Pentachloronitrobenzene	--	1,900	1.9	6,600	6.6	--	--	--	--	--	--	--
Pentachlorophenol	100	3,000	3	9,000	9	--	--	--	--	--	--	60,000
Phenanthrene	--	N/A	N/A	N/A	N/A	42,000	42	--	--	23,333	500	--
Phenol	--	37,000,000	37,000	100,000,000	100,000	48,000	48	--	--	--	--	--
Polychlorinated biphenyls (total)	--	22	0.022	740	0.74	34,000	34	--	--	--	--	--
Aroclor 1016	--	3,900	3.9	21,000	21	--	--	--	--	--	--	--
Aroclor 1242	--	220	0.22	740	0.74	--	--	--	--	--	--	--
Aroclor 1248	--	220	0.22	740	0.74	21,000	21	--	--	--	--	--
Aroclor 1254	--	220	0.22	740	0.74	7,000	7	--	--	--	--	--
Polycyclic aromatic hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--

Table 1. Summary of Cleanup Goals and Limitations
McCormick and Baxter Creosoting Company
Portland, Oregon

Compound	EPA Record of Decision (1996) Cleanup Goals for Sediment (mg/kg, dry weight)	EPA Region 9 Preliminary Remediation Goals (PRGs)				Oregon DEQ (2001) Guidance for Ecological Risk Assessment Level II Screening Level Values		Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment		Ecology and Environment, Inc. (January 16, 2003) Technical Memorandum to Oregon DEQ Response to Hart Crowser Inc., Comment on Sediment Cap Basis of Design		
		Residential Soil (ug/kg)	Residential Soil (mg/kg)	Industrial Soil (ug/kg)	Industrial Soil (mg/kg)	(ug/kg)	(mg/kg)	(ug/kg)	(mg/kg)	Ecological ('92 & '99/'01 Data) (ug/kg - dry weight)	Ecological ('99/'01 Data) (ug/kg - dry weight)	Human Health (ug/kg)
Organics												
Total PAH	--	--	--	--	--	1,610,000	1610	--	--	--	--	--
Total CPAH	2	--	--	--	--	--	--	--	--	--	--	2,000
Total LPAH	--	--	--	--	--	76,000	76	--	--	140,000	3,000	--
Total HPAH	--	--	--	--	--	193,000	193	--	--	90,000	2,750	--
Pyrene	--	2,300,000	2,300	29,000,000	29,000	53,000	53	--	--	9,000	275	--
2,3,7,8-TCDD (dioxin)	0.008	0.039	0.000039	0.16	0.00016	9	0.009	--	--	--	--	0.03
Tetrachloroethylene (PCE)	--	1,500	1.5	3,400	3.4	--	--	--	--	--	--	--
Toluene	--	520,000	520	520,000	520	--	--	--	--	--	--	--
Toxaphene	--	440	0.44	1,600	1.6	--	--	--	--	--	--	--
Tributyltin	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	650,000	650	3,000,000	3,000	--	--	--	--	--	--	--
1,1,1-Trichloroethane	--	1,200,000	1,200	1,200,000	1,200	--	--	--	--	--	--	--
Trichloroethylene (TCE)	--	53	0.053	110	0.11	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	--	6,100,000	6,100	62,000,000	62,000	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	6,100	6.1	62,000	62	--	--	--	--	--	--	--
Vinyl Chloride	--	79	0.079	750	0.75	--	--	--	--	--	--	--
Xylene (mixed)	--	270,000	270	420,000	420	--	--	--	--	--	--	--

Table 2. Summary of Inorganic and Organic Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

CONTAMINANT OF CONCERN	Port of St. Helens				Morse Bros.			
	Quad A	Quad B	Quad C	Quad D	Area 1	Area 2	Area 3	Area 4
Sample Designation	SH-A-042204	SH-B-042204	SH-C-042204	SH-D-042204	MB-01-042204	MB-02-042204	MB-03-042204	MB-04-042204
Date Sampled	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004
Inorganic (mg/kg)								
Arsenic	1.48	1.12	1.75	1.63	6.11[a]	4.35	3.48	3.82
Barium	99.9	40.2	72.8	54	191	184	177	183
Cadmium	0.0716J	<0.52	<0.51	<0.525	<0.611	<0.609	<0.589	<0.626
Chromium	8.4B2	6.99B2	7.08B2	9.43B2	14.6B2	16.3B2	14.1B2	15.4B2
Copper	7.29	6.58	6.66	7.19	10.9	10.5	11.3	11.7
Lead	5.4[b]	2.52[b]	2.75[b]	2.4[b]	7.34[b]	7.77[b]	5.8[b]	7[b]
Selenium	<5.72	<5.2	<5.1	<5.25	<6.11	<6.09	<5.89	<6.26
Silver	<1.14	<1.04	<1.02	<1.05	<1.22	<1.22	<1.18	<1.25
Zinc	57.4[b]	35	43.8	40.9	64.7[b]	69.8[b]	64.5[b]	62.3[b]
Mercury	0.0105J	<0.0204	0.00695J	0.00862J	0.0319	0.0328	0.0417	0.0232J
Organic (ug/kg)								
Dalapon	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
4-Nitrophenol	<32.4	<31.4	<33	<30.2	<37.9	<37.8	<39.3	<38.9
Dicamba	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
MCPP	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
MCPA	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
Dichloroprop	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
2,4-D	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
Pentachlorophenol	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
Silvex	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
2,4,5-T	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
2,4-DB	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
Dinoseb	<16.2	<15.7	<16.5	<15.1	<18.9	<18.9	<19.6	<19.4
Dichlorvos	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Mevinphos	<10.3	<9.69	<9.85	<9.26	<11.2	<11.3	<11.1	<11.9
Demeton,O-S	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Ethoprop	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Naled	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Sulfotepp	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Monocrotophos	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7

J= The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

B2= The analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (>10 times the concentration.

<= Practical quantitation limit.

C2= Second column confirmation was performed. The relative percent difference between the evaluated and determined to be < or = to 30%.

14.2 = an exceedance.

a= The sample exceeds the Oregon DEQ (2001) Guidance for Ecological Risk Assessment Level II Screening Level Values (mg/kg) for the associated contaminant.

b= The sample exceeds the Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment (mg/kg, dry weight)for the associated contaminant.

c= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Residential Soil (mg/kg) for the associated contaminant.

d= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Industrial Soil (mg/kg) for the associated contaminant.

L= Light Polynuclear Aromatic Hydrocarbons, H= Heavy Polynuclear Aromatic Hydrocarbons, C= Carcinogenic Polynuclear Aromatic Hydrocarbons.

Table 2. Summary of Inorganic and Organic Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

CONTAMINANT OF CONCERN	Port of St. Helens				Morse Bros.			
	Area A	**Area B**	**Area C**	**Area D**	**Area 1**	**Area 2**	**Area 3**	**Area 4**
Sample Designation	SH-A-042204	SH-B-042204	SH-C-042204	SH-D-042204	MB-01-042204	MB-02-042204	MB-03-042204	MB-04-042204
Date Sampled	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004
Organic (ug/kg)								
Phorate	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Dimethoate	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Diazinon	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Disulfoton	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Parathion,methyl	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Ronnel	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Malathion	<27.4	<25.8	<26.3	<24.7	<29.9	<30.1	<29.6	<31.6
Chlorpyrifos	<54.9	<51.7	<52.5	<49.4	<59.8	<60.3	<59.2	<63.2
Fenthion	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Parathion	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Trichloronate	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Tetrachlorvinphos	<6.86	<6.46	<6.56	<6.17	<7.47	<7.53	<7.4	<7.9
Fensulfothion	<41.2	<38.8	<39.4	<37	<44.8	<45.2	<44.4	<47.4
Tokuthion	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Merphos	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Bolstar	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
EPN	<13.7	<12.9	<13.1	<12.3	<14.9	<15.1	<14.8	<15.8
Azinphos,methyl	<20.6	<19.4	<19.7	<18.5	<22.4	<22.6	<22.2	<23.7
Coumaphos	<54.9	<51.7	<52.5	<49.4	<59.8	<60.3	<59.2	<63.2
Aldrin	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
alpha-BHC	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
beta-BHC	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
delta-BHC	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
gamma-BHC (Lindane)	<1.04	<0.944	<1.02	<1.06	0.407J C2	<1.13	<1.22	<1.19
4,4'-DDD	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
4,4'-DDE	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
4,4'-DDT	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
Dieldrin	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
Endosulfan I	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
Endosulfan II	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39

J= The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

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<= Practical quantitation limit.

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14.2 = an exceedance.

a= The sample exceeds the Oregon DEQ (2001) Guidance for Ecological Risk Assessment Level II Screening Level Values (mg/kg) for the associated contaminant.

b= The sample exceeds the Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment (mg/kg, dry weight)for the associated contaminant.

c= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Residential Soil (mg/kg) for the associated contaminant.

d= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Industrial Soil (mg/kg) for the associated contaminant.

L= Light Polynuclear Aromatic Hydrocarbons, H= Heavy Polynuclear Aromatic Hydrocarbons, C= Carcinogenic Polynuclear Aromatic Hydrocarbons

Table 2. Summary of Inorganic and Organic Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

CONTAMINANT OF CONCERN	Port of St. Helens				Morse Bros.			
	Area A	**Area B**	**Area C**	**Area D**	**Area 1**	**Area 2**	**Area 3**	**Area 4**
Sample Designation	SH-A-042204	SH-B-042204	SH-C-042204	SH-D-042204	MB-01-042204	MB-02-042204	MB-03-042204	MB-04-042204
Date Sampled	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004
Organic (ug/kg)								
Endosulfan sulfate	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
Endrin	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
Endrin aldehyde	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
Heptachlor	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
Heptachlor epoxide	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
Methoxychlor	<10.4	<9.44	<10.2	<10.6	<11.5	<11.3	<12.2	<11.9
Endrin ketone	<2.08	<1.89	<2.03	<2.11	<2.31	<2.26	<2.44	<2.39
Toxaphene	<104	<94.4	<102	<106	<115	<113	<122	<119
alpha-Chlordane	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
gamma-Chlordane	<1.04	<0.944	<1.02	<1.06	<1.15	<1.13	<1.22	<1.19
Dichlorodifluoromethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Chloromethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Vinyl chloride	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Bromomethane	<6.78	<6.38	<6.22	<6.1	<8.4	<9.99	<9.34	<9.18
Chloroethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Trichlorofluoromethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,1-Dichloroethene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Methylene chloride	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
trans-1,2-Dichloroethene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,1-Dichloroethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
2,2-Dichloropropane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
cis-1,2-Dichloroethene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Bromochloromethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Chloroform	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,1,1-Trichloroethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Carbon Tetrachloride	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,1-Dichloropropene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Benzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,2-Dichloroethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Trichloroethene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84

J= The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

B2= The analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (>10 times the concentration.

<= Practical quantitation limit.

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14.2 = an exceedance.

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b= The sample exceeds the Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment (mg/kg, dry weight)for the associated contaminant.

c= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Residential Soil (mg/kg) for the associated contaminant.

d= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Industrial Soil (mg/kg) for the associated contaminant.

L= Light Polynuclear Aromatic Hydrocarbons, H= Heavy Polynuclear Aromatic Hydrocarbons, C= Carcinogenic Polynuclear Aromatic Hydrocarbons

Table 2. Summary of Inorganic and Organic Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

CONTAMINANT OF CONCERN	Port of St. Helens				Morse Bros			
	Area A	Area B	Area C	Area D	Area 1	Area 2	Area 3	Area 4
Sample Designation	SH-A-042204	SH-B-042204	SH-C-042204	SH-D-042204	MB-01-042204	MB-02-042204	MB-03-042204	MB-04-042204
Date Sampled	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004
Organic (ug/kg)								
1,2-Dichloropropane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Dibromomethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Bromodichloromethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
cis-1,3-Dichloropropene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Toluene	<1.36	<1.28	<1.24	<1.22	<1.68	1.4J	1.05J	<1.84
trans-1,3-Dichloropropene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,1,2-Trichloroethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Tetrachloroethene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,3-Dichloropropane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Dibromochloromethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,2-Dibromoethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Chlorobenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Ethylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,1,1,2-Tetrachloroethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
m,p-Xylene	<2.71	<2.55	<2.49	<2.44	<3.36	2.17J	<3.74	<3.67
o-Xylene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Styrene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Bromoform	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Isopropylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Bromobenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
n-Propylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,1,2,2-Tetrachloroethane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,2,3-Trichloropropane	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
2-Chlorotoluene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,3,5-Trimethylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
4-Chlorotoluene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
t-Butylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,2,4-Trimethylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
sec-Butylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,3-Dichlorobenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
4-Isopropyltoluene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84

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<= Practical quantitation limit.

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c= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Residential Soil (mg/kg) for the associated contaminant.

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L= Light Polynuclear Aromatic Hydrocarbons, H= Heavy Polynuclear Aromatic Hydrocarbons, C= Carcinogenic Polynuclear Aromatic Hydrocarbons

Table 2. Summary of Inorganic and Organic Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

CONTAMINANT OF CONCERN	Port of St. Helens				Morse Bros			
	Area A	Area B	Area C	Area D	Area 1	Area 2	Area 3	Area 4
Sample Designation	SH-A-042204	SH-B-042204	SH-C-042204	SH-D-042204	MB-01-042204	MB-02-042204	MB-03-042204	MB-04-042204
Date Sampled	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004
Organic (ug/kg)								
1,4-Dichlorobenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
n-Butylbenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,2-Dichlorobenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,2-Dibromo-3-chloropropane	<2.71	<2.55	<2.49	<2.44	<3.36	<4	<3.74	<3.67
1,2,4-Trichlorobenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Hexachlorobutadiene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Naphthalene[L]	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
1,2,3-Trichlorobenzene	<1.36	<1.28	<1.24	<1.22	<1.68	<2	<1.87	<1.84
Phenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
bis(2-Chloroethyl)ether	<113	<95	<102	<100	<121	<122	<121	<123
2-Chlorophenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
1,3-Dichlorobenzene	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
1,4-Dichlorobenzene	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
Benzyl Alcohol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
1,2-Dichlorobenzene	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
2-Methylphenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
bis(2-Chloroisopropyl)ether	<282	<238	<256	<250	<304	<304	<302	<306
3-&4-Methylphenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
N-nitroso-di-n-propylamine	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
Hexachloroethane	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
Nitrobenzene	<113	<95	<102	<100	<121	<122	<121	<123
Isophorone	<113	<95	<102	<100	<121	<122	<121	<123
2-Nitrophenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
2,4-Dimethylphenol	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Benzoic Acid	<677	<570	<614	<600	<728	421J	<725	<735
bis(2-Chloroethoxy)methane	<113	<95	<102	<100	<121	<122	<121	<123
2,4-Dichlorophenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
1,2,4-Trichlorobenzene	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
Naphthalene[L]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
4-Chloroaniline	<113	<95	<102	<100	<121	<122	<121	<123

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B2= The analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (>10 times the concentration.

<= Practical quantitation limit.

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L= Light Polynuclear Aromatic Hydrocarbons, H= Heavy Polynuclear Aromatic Hydrocarbons, C= Carcinogenic Polynuclear Aromatic Hydrocarbons

Table 2. Summary of Inorganic and Organic Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

CONTAMINANT OF CONCERN	Port of St. Helens				Morse Bros			
	Area A	Area B	Area C	Area D	Area 1	Area 2	Area 3	Area 4
Sample Designation	SH-A-042204	SH-B-042204	SH-C-042204	SH-D-042204	MB-01-042204	MB-02-042204	MB-03-042204	MB-04-042204
Date Sampled	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004
Organic (ug/kg)								
Hexachlorobutadiene	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
4-Chloro-3-methylphenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
2-Methylnaphthalene	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Hexachlorocyclopentadiene	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
2,4,6-Trichlorophenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
2,4,5-Trichlorophenol	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
2-Chloronaphthalene	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
2-Nitroaniline	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Dimethylphthalate	<113	<95	<102	<100	<121	<122	<121	<123
Acenaphthylene[L]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
2,6-Dinitrotoluene	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
3-Nitroaniline	<113	<95	<102	<100	<121	<122	<121	<123
Acenaphthene[L]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
2,4-Dinitrophenol	<564	<475	<512	<500	<607	<608	<605	<613
4-Nitrophenol	<564	<475	<512	<500	<607	<608	<605	<613
Dibenzofuran	<56.4	<47.5	<51.2	<50	<60.7	<60.8	<60.5	<61.3
2,4-Dinitrotoluene	<113	<95	<102	<100	<121	<122	<121	<123
Diethylphthalate	<113	<95	<102	<100	<121	<122	<121	<123
4-Chlorophenylphenylether	<113	<95	<102	<100	<121	<122	<121	<123
Fluorene[L]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
4-Nitroaniline	<226	<190	<205	<200	<243	<243	<242	<245
4,6-Dinitro-2-methylphenol	<113	<95	<102	<100	<121	<122	<121	<123
N-Nitrosodiphenylamine	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
4-Bromophenylphenylether	<113	<95	<102	<100	<121	<122	<121	<123
Hexachlorobenzene	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Pentachlorophenol	<113	<95	<102	<100	<121	<122	<121	<123
Phenanthrene[L]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Anthracene	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Di-n-butylphthalate	<113	<95	<102	<100	<121	<122	<121	<123
Fluoranthene[H]	18.7J	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5

J= The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

B2= The analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (>10 times the concentration.

<= Practical quantitation limit.

C2= Second column confirmation was performed. The relative percent difference between the evaluated and determined to be < or = to 30%.

14.2 = an exceedance.

a= The sample exceeds the Oregon DEQ (2001) Guidance for Ecological Risk Assessment Level II Screening Level Values (mg/kg) for the associated contaminant.

b= The sample exceeds the Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment (mg/kg, dry weight)for the associated contaminant.

c= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Residential Soil (mg/kg) for the associated contaminant.

d= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Industrial Soil (mg/kg) for the associated contaminant.

L= Light Polynuclear Aromatic Hydrocarbons, H= Heavy Polynuclear Aromatic Hydrocarbons, C= Carcinogenic Polynuclear Aromatic Hydrocarbons

Table 2. Summary of Inorganic and Organic Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

CONTAMINANT OF CONCERN	Port of St. Helens				Morse Bros			
	Area A	Area B	Area C	Area D	Area 1	Area 2	Area 3	Area 4
Sample Designation	SH-A-042204	SH-B-042204	SH-C-042204	SH-D-042204	MB-01-042204	MB-02-042204	MB-03-042204	MB-04-042204
Date Sampled	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004	4/24/2004
Organic (ug/kg)								
Pyrene[H]	26	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Butylbenzylphthalate	<226	<190	<205	<200	<243	<243	<242	<245
3,3'-Dichlorobenzidine	<226	<190	<205	<200	<243	<243	<242	<245
Benzo(a)anthracene[H,C]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Chrysene[H,C]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
bis(2-Ethylhexyl)phthalate	<226	<190	<205	<200	<243	<243	<242	<245
Di-n-octylphthalate	<226	<190	<205	<200	<243	<243	<242	<245
Benzofluoranthenes[H,C]	27.4J	<38	<41	<40	<48.6	<48.6	<48.4	<49
Benzo(a)pyrene[H,C]	16.9J	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Indeno(1,2,3-cd)pyrene[H,C]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Dibenz(a,h)anthracene[H,C]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
Benzo(g,h,i)perylene[H]	<22.6	<19	<20.5	<20	<24.3	<24.3	<24.2	<24.5
#2 Diesel	<27.5	<23.8	<25.9	<24.6	<29.3	<29.7	<27.5	<31.5
Motor Oil	<55	<47.6	<51.9	<49.2	<58.5	<59.5	<54.9	<62.9
Gasoline by NWTPH-G	<4.39	<4.22	<4.11	<4.18	<4.82	<4.94	<4.99	<5.04
Total LPAH	0	0	0	0	0	0	0	0
Total HPAH	89	0	0	0	0	0	0	0
Total CPAH	44.3	0	0	0	0	0	0	0
Total PAH	133.3	0	0	0	0	0	0	0

J= The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

B2= The analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (>10 times the concentration.

<= Practical quantitation limit.

C2= Second column confirmation was performed. The relative percent difference between the evaluated and determined to be < or = to 30%.

14.2 = an exceedance.

a= The sample exceeds the Oregon DEQ (2001) Guidance for Ecological Risk Assessment Level II Screening Level Values (mg/kg) for the associated contaminant.

b= The sample exceeds the Oregon DEQ (2002) Suggested Default Background Concentrations for Metals for Freshwater Sediment (mg/kg, dry weight)for the associated contaminant.

c= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Residential Soil (mg/kg) for the associated contaminant.

d= The sample exceeds the EPA Region 9 Preliminary Remediation Goals (PRGs) for Industrial Soil (mg/kg) for the associated contaminant.

L= Light Polynuclear Aromatic Hydrocarbons, H= Heavy Polynuclear Aromatic Hydrocarbons, C= Carcinogenic Polynuclear Aromatic Hydrocarbons

Table 3. Summary of Dioxin/Furan Analytical Results
McCormick and Baxter Creosoting Company
Portland, Oregon

Component (pg/g)	MB-02-042204	Qualifier	WHO 1997 TEF	TEQ	SH-A-042204	Qualifier	WHO 1997 TEF	TEQ
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.42	U	1	0	0.34	U	1	0
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.83	U	1	0	0.75	U	1	0
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.97	U	0.1	0	0.88	U	0.1	0
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.97	U	0.1	0	1.9	U	0.1	0
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.98	U	0.1	0	0.88	U	0.1	0
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	**5**	**J**	0.01	**0.05**	**56**		0.01	**0.56**
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	**32**		0.0001	**0.0032**	**490**		0.0001	**0.049**
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.36	U	0.1	0	0.33	U	0.1	0
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.62	U	0.05	0	0.52	U	0.05	0
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.64	U	0.5	0	0.52	U	0.5	0
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.87	U	0.1	0	0.72	U	0.1	0
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.86	U	0.1	0	0.71	U	0.1	0
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.98	U	0.1	0	0.82	U	0.1	0
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2	U	0.1	0	0.95	U	0.1	0
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.69	U	0.01	0	**7**	**JA**	0.01	**0.07**
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.51	U	0.01	0	0.59	U	0.01	0
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1	U	0.0001	0	**11**	**J**	0.0001	**0.0011**
Toxicity Equivalency Quotient (TEQ)				**0.0532**				**0.6801**

EPA Region 9 PRG for industrial soil is 16 pg/g

pg/g picograms per gram

32 = a detection

PACRIM GEOTECHNICAL INC.
506 SW 6TH AVENUE, SUITE. 1006, PORTLAND, OR 97204

GEOTECHNICAL ENGINEERING AND APPLIED EARTH SCIENCES

Date June 14, 2005
Project McCormick & Baxter

To Chad Nancarrow
Ecology & Environment
Subject Avery Quarry Visit

From André D. Maré, P.E.

MEMORANDUM

On June 10, 2005, I visited the Avery Quarry owned by Ross Island Sand & Gravel Company. Present at the site were Paul Godsil and Craig Jacobs of Ross Island and Mark Riem of Wilder Construction Company. The purpose of the visit was to examine proposed materials for use in the McCormick & Baxter upland cap. The two materials examined were the Topsoil and the Sand.

Topsoil

The proposed material is the result of surface stripping several years ago of the topsoil from the portion of the quarry designated Area 179. The topsoil has been stockpiled in a large, elongated embankment paralleling the Columbia River. I examined the material within a shallow backhoe test pit and retrieved a sample. I also walked the embankment to assess uniformity.

The Specification requires the topsoil to fall within USDA textural classifications of *silty loam*, *sandy loam*, or *loam*. Materials observed appear to meet this criterion, most likely consisting of *sandy loam*, although it may possibly be too sandy and thus fall into the categories of *loamy sand* or *sand*. A grain size analysis should be performed to determine whether the material falls within the specified USDA textural classifications. It should be noted that use of the textural classification requires the grain size distribution test be performed in accordance with the USDA test procedure, which only considers the material passing the #10 sieve (2 mm).

The material appears to be light brown silty SAND according to the Unified Soil Classification System (USCS). Sand particles are near the fine end of the sand spectrum, near the silt/sand boundary. Scattered coarse sand and gravel were noted as well as occasional cobbles and boulders. Paul Godsil told me they planned to run the material through a screen in order to insure compliance with the 8-inch maximum particle size requirement.

Assuming the proposed topsoil meets the textural and gradation requirements of the Specification, I find no reason to reject this material based on my observations. Observations were limited to near surface materials, so I recommend ongoing inspection and testing of materials as the project progresses.

Sand

Sand was observed in-place within a near-vertical cut slope. The material appears to be gray, medium grained SAND according to the Unified Soil Classification System (USCS). The upper area of the source zone is slightly coarser than the lower area, with the upper area medium to coarse, and the lower area fine to medium. However, all materials observed appeared to be predominantly medium grained. I noted no evidence of materials coarser than ¼" within the sand deposit. However, gravel surfacing material was noted at the top and base of the cut slope. This material will have to be carefully removed prior to mining.

Paul Godsil provided a copy of a permeability test result showing compliance with the permeability requirement of the Specification. He noted that the test had been performed on the coarser, upper zone and that they had recently submitted a lower-zone sample for additional permeability testing. It appears that both the upper and lower zone materials will meet the gradation requirement of containing less than 5% fines, although this should be confirmed by performing grain size distribution tests.

Assuming the proposed sand meets the gradation and permeability requirements of the Specification, I find no reason to reject this material. Observations were limited to near surface materials, so I recommend ongoing inspection and testing of materials as the project progresses.

PACRIM GEOTECHNICAL INC.
506 SW 6TH AVENUE, SUITE. 1006, PORTLAND, OR 97204

GEOTECHNICAL ENGINEERING
AND APPLIED EARTH SCIENCES

Date	June 30, 2005	**Project**	McCormick & Baxter
To	Chad Nancarrow Ecology & Environment	**Subject**	Angell Quarry Visit
From	André D. Maré, P.E.		

MEMORANDUM

On June 30, 2005, I visited the Angell Quarry owned by Morse Brothers. Present at the site was William Stimpson of Morse Brothers. The purpose of the visit was to examine proposed materials for use in the McCormick & Baxter upland cap. The materials examined were:

- 4”-minus rock (for biotic layer)
- 1½”-minus rock (for access roads and filling ACB voids)
- 12”-minus rock (for outfall armoring and spillway).

Prior to my visit, I reviewed the Specification Section 02200 which describes required material specifications. At the quarry, I examined stockpiles for each of the three materials and obtained bucket samples for further examination, if necessary. For the 1½”-minus and 4”-minus materials, I was provided grain size distribution curves that met the Specification. For the 12”-minus material, grain size distribution data was not provided. Based on visual examination, the 12”-minus stockpile appears to represent the approximate grain size distribution required by the Specifications.

Each of the three products consisted of hard, durable, angular basalt and/or andesite rock. Materials were free of defects. I recommend accepting these products. I recommend the design team continue to perform ongoing inspections of rock materials as the job progresses.

F

Change Orders, Work Directives, and Other Correspondances

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 1

DATE May 23, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondence which pertain to the subject of this order and authorizes the following changes in the work:

1. Premobilization:

   a. Contractor shall be permitted to access and utilize the paved parking area at the McCormick and Baxter site for the sole purpose of mobilizing Contractor's construction equipment and trailers and for the installation of temporary utilities. Contractor expressly agrees that the work permitted under this Change Order does not provide for mobilization or installation of any other materials, supplies, etc., to the paved parking area or other areas of the site, unless otherwise approved by DEQ.

   b. The work included in this change order is not expected to require oversight by DEQ or its Engineer. In the event that in DEQ's sole judgment oversight is required, Contractor agrees to reimburse DEQ for the cost of the oversight at a rate of $100.00 per hour.

2. Changes to Specifications:

   a. Section 02200 - Part 2.3.C. This change relates to the grading requirements test method and the minimum in-place permeability requirement for the drainage layer sand.

      - Change grading requirements test method from ASTM C136 to ASTM D422.
      - Change minimum in-place permeability from 10^{-1} centimeters per second (cm/s) to 10^{-2} cm/s.

   b. Section 02200 - Part 2.7.C. This change relates to the additional material requirements for the aggregate for gravel access roads and outfall spillway (changes made for consistency with ODOT Standard Spec 02630).

      - Delete Part 2.7.C.1. (plasticity index testing not required)
      - Change minimum sand equivalent from 50 to 30.
      - Add the following Fracture of Rounded Rock requirement, per ODOT Standard Specifications 02630.10(b):
        - Minimum % of Fractured Particles retained on the 6.3mm (1/4 inch) sieve by mass (weight) of material shall be 50%.

   c. Section 02200 - Part 3.3.B.2, Part 3.3.C.3, and Part 3.3.F.3. This change relates to the test method for determining the moisture-density curve for compaction.

      - Change test method for determining maximum density from ODOT TM 306C and AASHTO T224 to: ASTM D698 (*Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort*) or ASTM D1557 (*Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort*).

d. Section 02200 - Part 3.3.D.2. This change relates to the compaction requirements for the biotic barrier layer.
   - Delete Part 3.3.D.2 and replace with the following:

     "2. Compact, as necessary, by proof-rolling with low ground pressure (<5 psi) static drum roller (or other equipment approved by the Engineer) until non-movement condition beneath the compaction equipment is achieved.
        a. Compaction shall begin immediately after the material is spread.
        b. Apply additional water over the materials as necessary to achieve proper compaction."

c. Section 02200 - Part 3.3.F.3. This change relates to the compaction requirements for the aggregate for gravel access roads.
   - Change minimum compaction from 95% to 90% of maximum dry density.

2. Except as may be required by Paragraph 1.b, above, Contractor expressly acknowledges that this Change Order Number 1 does not modify or change the Not-to-Exceed amount of the Contract, nor does it modify or change the number of on-site days specified in the Contract.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $0.00

TOTAL CREDIT: $0.00

TOTAL "NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,328,100.00

THIS CHANGE ORDER:

TOTAL EXTRA: $0.00

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,328,100.00

Four million three hundred twenty eight thousand one hundred dollars and zero cents

AGENCY

BY: [signature] DATE: 7/14/05

TITLE: CONTRACT OFFICER

CONTRACTOR

BY: [signature] DATE: 07 JULY 05

TITLE: BRANCH MANAGER

STATE OF OREGON - DAS

BY: Teresa M Oritz DATE: 7/14/05

TITLE: State Procurement Analyst

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 2

DATE July 7, 2005

PROJECT: McCormick and Baxter Upland Cap

Reference is made to two subcontracts between Wilder Construction and Ecology and Environment, Inc at the site. These are the *Demolition and Removal* subcontract and the *Support Facility Modifications* subcontract. Pertinent parts of the Plans and Specifications for those subcontracts are incorporated into the Upland Cap contract. Some of the work under those subcontracts is moved to the Upland Cap Contract. This Change Order amends any or all preceding contract documents and correspondence which pertain to the subject of this order and authorizes the following changes in the work:

1. Support Area Grading

    a. The completion of this work (support area grading) is being removed from the *Support Area Modifications* subcontract and is being added to the Upland Cap contract. Asphalt Paving of the Support Area is not required (Section 02510 of the *Support Area Modifications* subcontract).
    b. During the work on the Upland Cap contract, the Contractor shall grade the support area as needed to keep it passable by vehicles.
    c. Upon completion of the Upland Cap, the Contractor shall grade the support area pad to the elevations (except for asphalt) indicated in the *Support Area Modifications* subcontract.
    d. Additional stone shall be placed at the entrance to the new shop building and the entrance to the new hazardous waste storage area to provide a smooth transition from the pad to the concrete.
    e. Except for the additional stone, which shall be paid for under Force Account, the TOTAL "NTE" CONTRACT PRICE is not changed by this item.

2. Fencing at Support Area and at Access Road to North Edgewater Drive:

    a. This work was originally in the *Support Area Modifications* (under Section 02821) subcontract and will be moved to the Upland Cap contract.
    b. The work consists of an 8' high chain-link fence with razor wire around the support area and a 6' high chain-link fence along the access road. Two vehicle gates extend through the 8' high fence.
    c. The TOTAL "NTE" CONTRACT PRICE will be increased by $25,000.00 to account for this item.

3. Monitoring Wells

    a. The monitoring well installation and modifications have changed, as indicated in EE WC 02 dated June 7, 2005. The work will be paid at the unit rates in the contract.

4. Bedding Beneath Pipe

    a. Wilder is here by relieved of the necessity to place imported sand for bedding in areas where the native material encountered at the bottom of the trench is sand and meets the following conditions:
        - Is free from organic material, mica, loam, clay, or other deleterious or foreign matter, and
        - *does not contain rocks that may damage the pipe during compaction.*
    b. If over-excavation occurs effort must be made to compact the material re-placed within the over excavation.

c. The TOTAL "NTE" CONTRACT PRICE is not changed by this item.

5. Monitoring Well Couplings

   a. Wilder may utilize a PVC coupling and stainless steel screws to extend the well casings. Flooding of the inner space between the casing and well is not a concern. Wilder and its subcontractors remain responsible for the health and safety of their employees and the procedures followed to minimize hazardous conditions.
   b. The TOTAL "NTE" CONTRACT PRICE is not changed by this item.

6. Wells Within The Impermeable Cap

   a. This item applies to those wells within the impermeable cap footprint where the proposed subgrade elevation is below the existing concrete pad, requiring removal of the pad.
   b. Upon excavation around the protective casing to the proposed subgrade elevations, if the casing is still present at that elevation (i.e., the casing continues to penetrate into the subsurface) and the monument structure is deemed stable by the Engineer, then placement of concrete at the base of the protective casing shall not be required.
   c. The TOTAL "NTE" CONTRACT PRICE is not changed by this item.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $0.00

TOTAL CREDIT: $0.00

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,328,100.00

THIS CHANGE ORDER:

TOTAL EXTRA: $25,000.00

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,353,100.00

Four million three hundred fifty three thousand one hundred dollars and zero cents

AGENCY

BY: ______________________ DATE: __________

TITLE: ______________________

CONTRACTOR

BY: ______________________ DATE: __________

TITLE: ______________________

STATE OF OREGON - DAS

BY: ______________________ DATE: __________

TITLE: ________________________________

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 3

DATE August 16, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

1. Import Topsoil and Seeding

   a. The proposed Avery topsoil does not meet the gradation (hydrometer analysis) and pH requirements specified by Section 02200, Part 2.6 of the Contract Documents. However, per consultation with the City of Portland Revegetation Program, the proposed topsoil is approved, provided the soil is amended with the following:
      - Kiwi Power™ (supplied by Quattro Environmental, Inc.) at a rate of 5 gallons/acre
      - Fertil-Fibers™ (supplied by Quattro Environmental, Inc.) at a rate of 4,000 pounds/acre
      - Humic shale at a rate of 500 pounds/acre
      - Liquid humus at a rate of 5 gallons/acre
      - Mineral supplements at the following rates:
        - 20 pounds/acre urea
        - 75 pounds/acre phosphorous
        - 90 pounds/acre potassium
        - 500 pounds/acre elemental sulfur
        - 2 pounds/acre zinc
        - 3 pounds/acre manganese
        - 3 pounds/acre copper
        - 1 pound/acre boron

   b. The above amendments shall be applied to all areas covered with the Avery topsoil. Areas covered with topsoil obtained from the existing stockpile will not require amending under this Change Order.

   c. In lieu of applying seed by the drill method and covering with straw mulch (per Contract requirements), seed shall be applied by hydroseeding with a mix that includes the amendments listed above; native seeds applied at the PLS rates per Specification Section 02905; tackifier (i.e., Rantec's Super TackTM), and enough wood fiber mulch to act as an application guide or tracer.

   d. Hydroseeding shall occur during the month of September.

   e. The TOTAL "NTE" CONTRACT PRICE is not changed by this item.

2. Replacement of Topsoil with 1.5"-minus Base Rock for Construction of Temporary Access Road

   a. Wilder may utilize 1.5"-minus base rock for construction of a temporary access road (i.e., "clean road") from the site entrance to the impermeable cap for hauling import soil materials.

   b. The access road shall be underlain with demarcation fabric in accordance with the Specifications and Change Order #2.

   c. After the temporary road is no longer needed, the rock material shall be spread to a maximum 12" depth, then covered with topsoil to final grade, per design.

d. The rock material shall be paid for under Pay Item 01D (Topsoil Import) at a unit price of $14.00 per ton.
e. The TOTAL "NTE" CONTRACT PRICE is not changed by this item.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $25,000.00

TOTAL CREDIT: $0.00

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,353,100.00

THIS CHANGE ORDER:

TOTAL EXTRA: $0.00

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,353,100.00

Four million three hundred fifty three thousand one hundred dollars and zero cents

AGENCY

BY: ______________________ DATE: ____________

TITLE: ______________________

CONTRACTOR

BY: ______________________ DATE: ____________

TITLE: ______________________

STATE OF OREGON - DAS

BY: ______________________ DATE: ____________

TITLE: ______________________

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 4

DATE August 16, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

1. Placement of Rip-Rap Along Edge of ACB

   a. Wilder shall supply and place 2' rip-rap in the following areas:
      - Willamette Cove area, approximately 80-feet in length
      - FWDA/RR-bridge area, approximately 75-feet in length
      - Outfall area, approximately 30-feet in length
   b. The rip-rap shall be placed along the shoreward edge of the ACB. The depth shall be approximately 3-feet, and the width shall be approximately 4-feet. Total rip-rap quantity to complete work: approx. 200 tons (assumes 2.25 tons/cubic yard).
   c. Prior to performing the above work, sand shall be placed over the ACB to fill in all void spaces and to protect the surface from the tracked equipment.
   d. Approximately 100 tons of rip-rap shall also be stockpiled in the FWDA (for future use) at a location designated by the Engineer.
   e. The TOTAL "NTE" CONTRACT PRICE will be increased by $23,346.33 to account for this item.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $25,000.00

TOTAL CREDIT: $0.00

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,353,100.00

THIS CHANGE ORDER:

TOTAL EXTRA: $23,346.33

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,376,446.33

Four million three hundred seventy six thousand four hundred forty six dollars and thirty three cents

AGENCY

BY: Alan D. Kiphut DATE: 8/16/05

TITLE: LQ Administrator

SC 8/16/05

CONTRACTOR

BY: [signature] DATE: 8-17-05

TITLE: Sr. Project Mgr.

STATE OF OREGON - DAS

BY: ______________________ DATE: ______________

TITLE: ______________________

CONTRACTOR

BY: ______________________ DATE: ____________

TITLE: ______________________

STATE OF OREGON - DAS

BY: Teresa McRoberts DATE: 8/22/05

TITLE: State Procurement Analyst

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 5

DATE August 23, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

1. New Gate and Gravel Road in FWDA to Access Wells Outside Fence

    a. Install an additional vehicle gate (14' wide swing gate) in the FWDA to allow access to the wells to the north of the property.
    b. Install a gravel access road to the wells outside the cap using 1.5"-minus rock underlain by geotextile. Gravel road dimensions: approx. 100' long, 15' wide, and 12" deep (estimated to require approx. 100 tons)
    c. Slope the road for positive drainage.
    d. A drawing/sketch has been provided showing the gate and road locations.
    e. The TOTAL "NTE" CONTRACT PRICE will be increased by $4,474.95 to account for this fixed price item.

2. Well Extensions

    a. Extend monitoring wells EW-8s, MW-17s, and EW-15s, located along the top of bank (outside of the impermeable cap).
    b. Perform extensions of the well risers and protective casings to the specified heights above ground surface as shown on Detail 12, Drawing 6.
    c. Install bollards around each extended well.
    d. Survey new top of casing elevations and include on Record Drawings.
    e. The TOTAL "NTE" CONTRACT PRICE will be increased by $5,134.96 to account for this fixed price item.

3. Material Stockpiles

    a. Supply and stockpile the following additional materials (for future use):
        - 400 tons sand
        - 100 tons biotic rock (4"-minus rock)
        - 100 tons 12"-minus rock
    b. Underlay stockpiles with geotextile (for demarcation).
    c. Stockpile locations shall be determined by the Engineer.
    d. The TOTAL "NTE" CONTRACT PRICE will be increased by $8,591.17 to account for this fixed price item.

4. Sediment Cap Repair

    a. Place a thin layer of sand (approx. 4" thick) over the staked repair area (approx. 900 square feet, in plan).

b. Assist with placement of geomats.
c. Place a thin layer of sand (approx. 4" thick) over the geomats.
d. Assist with placement of fence panels over the sand layer.
e. Place sand over the fence panels resulting in a thickness of approx. 4.5'.
f. Place biotic rock (4"-minus) over the sand resulting in a thickness of approx. 4".
g. Place 12"-minus rock over the biotic rock resulting in a thickness of approx. 12".
h. Place sand over the 12"-minus rock to fill void spaces.
i. To minimize impacts to the vegetated bank, all vehicles, trucks, and construction equipment accessing the beach shall use the same route. Prior to using this route, placed sand atop the ACB along this route (fill void spaces) to prevent damage to the ACB.
j. Survey extents and final surface elevations of the repair area and include on Record Drawings.
k. The TOTAL "NTE" CONTRACT PRICE will be increased by $10,910.57 to account for this fixed price item.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $48,346.33

TOTAL CREDIT: $0.00

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,376,446.33

THIS CHANGE ORDER:

TOTAL EXTRA: $29,111.65

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,405,557.98

Four million four hundred five thousand five hundred fifty seven dollars and ninety eight cents

AGENCY

BY: ______________________ DATE: ______________

TITLE: ______________________

CONTRACTOR

BY: ______________________ DATE: ______________

TITLE: ______________________

STATE OF OREGON - DAS

BY: ______________________ DATE: ______________

TITLE: ______________________

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 6

DATE August 30, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

1. Pave Support Area

   a. Disconnect electric, phone, water, and sewer from trailers. Move trailers and waste tank off of the support pad. Protect utilities sticking through pad.
   b. Grade the gravel support pad to 8 inches below final grade, as indicated in the Support Area Modification subcontract contract documents. Place the removed gravel spoils on N. Edgewater and grade smooth (e.g., fill ruts, potholes, etc.) to facilitate vehicle access to the site.
   c. Apply Geotextile over the support pad graded surface.
   d. Place 4 inches of ¾-inch minus gravel over the geotextile and compact with controlled movement of construction equipment.
   e. Place and compact 2 separate lifts of asphalt cement as specified in the Support Area Modification subcontract contract documents.
   f. Move trailers and waste tank back to their approximate original position. Reconnect water, sewer, electric, and phone.
   g. Move conex boxes and steel containment bin (i.e., "bathtub") to paved area, as directed.
   h. The TOTAL "NTE" CONTRACT PRICE will be increased by $80,925.97 for this fixed price item.

2. Extend Support Area Fencing

   a. Extend support area fencing in southwest direction so entire asphalted area is enclosed.
   b. Move new 20' gate to tire wash location.
   c. The TOTAL "NTE" CONTRACT PRICE will be increased by $4,679.62 for this fixed price item.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $77,457.98

TOTAL CREDIT: $0.00

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,405,557.98

THIS CHANGE ORDER:

TOTAL EXTRA: $85,605.59

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,491,163.57

Four million four hundred ninety one thousand one hundred sixty three dollars and fifty seven cents

AGENCY

BY: ______________________ DATE: ____________

TITLE: ______________________

CONTRACTOR

BY: ______________________ DATE: ____________

TITLE: ______________________

STATE OF OREGON - DAS

BY: ______________________ DATE: ____________

TITLE: ______________________

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 7

DATE September 1, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

1. Place Additional Jute Matting

   a. Place additional jute matting on exposed steep soil slopes (along the bank) at the spillway, outfall structure, and road in the northwest corner of the cap. Steep slopes are slopes greater than 2% grade, as determined visually.
   b. Completion of jute matting placement in the swale is included in the base contract. If there is insufficient jute matting currently onsite to complete the work in the base contract and the additional work specified herein, the additional matting will be provided by DEQ.
   c. All jute matting shall be secured to adjacent mats and pinned to the underlying soil as recommended by the manufacturer.
   d. The TOTAL "NTE" CONTRACT PRICE will be increased by $500.00 for this fixed price item.

2. Install Culverts at Spillway

   a. Provide two(2) 20-foot long 8-inch diameter corrugated-outside, smooth-wall-inside HDPE culverts at the spillway.
   b. Bed the culverts so they are adequately supported over their length without the possibility of sharp rock edges impinging on the pipe.
   c. Cover the culverts with 1.5-inch-minus crushed rock for access roads to at least the minimum thickness required by the manufacturer for a H-20 truck load. This cover shall provide vehicular access over the culverts to make a continuous road over the spillway.
   d. Details of the culvert installation shall be included in the as-built survey.
   e. The TOTAL "NTE" CONTRACT PRICE will be increased by $1,450.00 for this fixed price item.

3. Flush Mount Existing Well

   a. MW-59 currently extends up through the access road.
   b. Modify this well to be flush mounted (traffic-rated) with the top of the access road, similar to the construction of other flush mounted wells.
   c. The top elevation of this well, as well as all other wells modified under this contract, shall be included in the final as-built survey.
   d. The TOTAL "NTE" CONTRACT PRICE will be increased by $989.92 for this fixed price item.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $163,063.57

TOTAL CREDIT: $0.00

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,491,163.57

THIS CHANGE ORDER:

TOTAL EXTRA: $2,939.92

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,494,103.49

Four million four hundred ninety four thousand one hundred three dollars and forty nine cents

AGENCY

BY: [signature] DATE: 9/6/05

TITLE: C.O. Delegate

CONTRACTOR

BY: [signature] DATE: 9-7-05

TITLE: Sr. Project Mgr.

STATE OF OREGON - DAS

BY: ______ DATE: ______

TITLE: ______

TOTAL CREDIT: $0.00

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,491,163.57

THIS CHANGE ORDER:

TOTAL EXTRA: $2,939.92

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,494,103.49

Four million four hundred ninety four thousand one hundred three dollars and forty nine cents

AGENCY

BY: ____________________ DATE: ____________

TITLE: ____________________

CONTRACTOR

BY: ____________________ DATE: ____________

TITLE: ____________________

STATE OF OREGON - DAS

BY: Teresa Moritz DATE: 9/7/05

TITLE: State Procurement Analyst

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 8

DATE September 21, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

1. Mineral Supplements

   a. Amend cap areas (approximately 10 acres) covered with topsoil obtained from the existing soil stockpile and topsoil trucked in from the Morse Brothers Site with the following mineral supplements:
      - 20 lbs/acre urea
      - 45 lbs/acre P_2O
      - 40 lbs/acre K_2O
      - 500 lbs/acre Ag. Lime
      - 30 lbs/acre elemental sulfur
      - 3 lbs/acre copper
      - 1 lb/acre boron

   b. The above amendments shall be applied hydraulically with the seed/mulch/tackifier mix.

   c. The TOTAL "NTE" CONTRACT PRICE will be increased by $2,764.80 for this fixed price item.

2. Remove/Replace Fence Posts

   a. Remove and replace eight (8) fence posts from their curved configuration to a straight alignment (per design) around MW-59s.

   b. Install posts in accordance with specification Section 02845.

   c. The TOTAL "NTE" CONTRACT PRICE will be increased by $1,440.83 for this fixed price item.

3. VanHouten Restoration

   a. Grade area along VanHouten between the new and old fencelines by the southern edge of the Site. Grade to drain away from the Site towards the Ziedel Property.

   b. Place and grade approx. 2" of topsoil atop the above area.

   c. Following topsoil placement, hydroseed the area with native seed mix.

   d. Place rip-rap (from existing stockpile) at the eastern edge where the temporary fence panels are currently located to block vehicular traffic.

   e. Remove old fence gate.

   f. Re-install the old fence panels between the new and old fencing, immediately adjacent to the rip-rap.

   g. The TOTAL "NTE" CONTRACT PRICE will be increased by $5,607.13 for this fixed price item.

4. Compost Application

    a. Place compost (approx. ½-inch deep) on the exposed river bank slopes by the spillway, outfall, and northwest corner.
    b. The TOTAL "NTE" CONTRACT PRICE will be increased by $4,156.10 for this fixed price item.

5. Extra Rock for Gravel Road Turning Radii

    a. Place, grade, and compact additional 1.5"-minus rock for turning radii at gravel road intersections at spillway and two gate locations along the west side of the impermeable cap.
    b. The TOTAL "NTE" CONTRACT PRICE will be increased by $1,244.93 for this fixed price item.

6. Sign Posts

    a. Install sign posts at locations designated by the Engineer including:
        - Ten (10) 10-ft. tall (above grade) single posts @ 4-in. x 4-in. and buried 4 ft.; and
        - Three (3) 15-ft. tall (above grade) double posts @ 6-in. x 6-in. and buried 5 ft.
    b. Soil spoils shall be captured and stored in approved steel 55-gallon drums, then stored within the on-site hazardous waste storage area.
    c. Restore all disturbed areas to original condition.
    d. The TOTAL "NTE" CONTRACT PRICE will be increased by $4,816.98 for this fixed price item.

7. Extra Bag of Seed

    a. Provide an additional bagged quantity of Soil Cap seed mix to cover ½ acre per Specification Section 2.2.F.3.
    b. The TOTAL "NTE" CONTRACT PRICE is not changed by this item.

8. Removal of Sterile Wheatgrass

    a. Eliminate regreen (sterile wheatgrass) from the Pond Side Slopes and Swale Areas seed mixes.
    b. This change results in a credit of $204.75 to the NTE Contract Price.

9. Installation of Additional Gate at Support Pad

    a. Install an additional gate at the western edge fence at the tire wash, as specified.
    b. Gate shall be 20-ft. wide x 8-ft. tall industrial swing gate in accordance with Section 02821 of the Support Facility Modifications Contract Documents.
    c. The TOTAL "NTE" CONTRACT PRICE will be increased by $2,166.82 for this fixed price item.

10. Extra Seeding Along Top of Bank

    a. Hydroseed the graded/disturbed areas between the gravel road and the top of river bank. This area totals approximately 1.5 acres. However, half of this area (0.75 acres) is considered part of the original contract. The remaining half (0.75 acres) shall be compensated for under this change item.
    b. Use Soil Cap Seed mix (per Specification Section 02905, Part 2.2.F.3) applied hydraulically with mulch, tackifier, and fertilizer.
    c. The TOTAL "NTE" CONTRACT PRICE will be increased by $2,426.14 for this fixed price item.

11. Quantity Adjustments for Unit Bases Pay Items

    a. Item 1.d, Topsoil Import.
        - Increase import topsoil quantity from the original contract estimated quantity of 72,200 tons to 74,834.4 tons (2,634.4 tons extra).
        - The TOTAL "NTE" CONTRACT PRICE will be increased by $36,881.60 (2,634.4 tons x $14.00/ton) for this item.
    b. Item 5.e.1, New Monitoring Well Installation, 2" Diameter.

- Increase 2" monitoring well installation from the original contract estimated quantity of 90 vertical linear feet (VLF) to 110 VLF (20 VLF extra).
- The TOTAL "NTE" CONTRACT PRICE will be increased by $2,600.00 (20 VLF x $130.00/VLF) for this item.

c. Item 5.e.2, New Monitoring Well Installation, 4" Diameter.

- Decrease 4" monitoring well installation from the original contract estimated quantity of 260 vertical linear feet (VLF) to 227 VLF (33 VLF less).
- The TOTAL "NTE" CONTRACT PRICE will be decreased by $5,610.00 (33 VLF x $170.00/VLF) for this item.

d. Item 5.f, Hazardous Waste Disposal

- Decrease hazardous waste disposal from the original contract estimated quantity of 3 tons to 0 tons (3 tons less).
- The TOTAL "NTE" CONTRACT PRICE will be decreased by $2,400.00 (3 tons x $800.00/ton) for this item.

e. Item 5.g, Non-Hazardous Waste Disposal

- Increase non-hazardous waste disposal from the original contract estimated quantity of 10 tons to 39.71 tons (29.71 tons extra).
- The TOTAL "NTE" CONTRACT PRICE will be increased by $4,456.50 (29.71 tons x $150.00/ton) for this item.

12. Increase Number of On-Site Working Days

a. In addition to compensation for Items 1 through 10, above, the number of On-Site Working Days specified in the Contract shall be increased from 74 to 92.

13. Extension of Completion Date

a. The date beyond which all field work (including demobilization and seeding) is performed that will result in liquidated damages of $1,000.00 per calendar day shall be extended from September 16, 2005, to September 30, 2005.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $166,003.49

TOTAL CREDIT: $0.00

TOTAL "NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,494,103.49

THIS CHANGE ORDER:

TOTAL EXTRA: $68,561.83

TOTAL CREDIT $8,214.75

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,554,450.57

Four million five hundred fifty four thousand four hundred fifty dollars and fifty seven cents

AGENCY

BY: Jeffrey Johnston[signature] DATE: 9/23/05

TITLE: Acting Division Administrator

CONTRACTOR

BY: [signature] DATE: 9-22-05

TITLE: Sr. Project Manager

STATE OF OREGON - DAS

BY: ______________________ DATE: ______________

TITLE: ______________________

BY: ______________________ DATE: ______________

TITLE: ______________________

STATE OF OREGON - DAS

BY: Teresa Merrit DATE: 9/26/05

TITLE: State Procurement Analyst

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 9

DATE October 17, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

DEQ will provide 23 CETCO mats on a truck at the Support Area. These must be unloaded by the Contractor. DEQ will give as much notice as possible to the Contractor concerning the arrival date.

1. Provide Materials in Stockpile for Sediment Cap Improvements and mobilize equipment.

   a. Provide temporary toilet, planning services, and other infrastructure needs to perform the work

   b. Mobilize necessary equipment on site.

   c. Provide the following quantities of materials

      - 1,800 tons of sand
      - 360 tons of biotic rock
      - 1,240 tons of 10-inch minus rock.
      - Sufficient rock (about 60 tons) to construct an access road from the new gate to existing access roads.

   b. Earthen and rock materials (except access road rock) may be stockpiled on the top of the river bank.

   c. The earthen and rock materials shall be identical to those materials provided by the Contractor during other phases of the work, except 10-inch minus rock shall have a maximum size of 10 inches in lieu of the riprap previously supplied.

   d. The CETCO mats shall be stored as recommended by the Manufacturer within the fenced Support Area.

   e. This work shall be coordinated with Item 2. below. The work in Items 1 and 2 shall commence as quickly as possible after approval of this change order.

   f. Provide a new gate by the N. Edgewater entrance to the site.

2. Install Sediment Cap Materials

   a. Place the materials specified in Item No. 1 above in accordance with the attached plan and section, or as directed by DEQ.
   b. In-water work may start immediately after execution of this Change Order.

c. All reasonable and prudent actions shall be taken to complete the in-water work by October 31, 2005. In no case shall in-water work be performed after October 31, 2005.
d. If the low tide river stage increases to the point that the area to be covered is inundated with more than 2 foot of water prior to commencement of this work, the work shall not be performed unless there is substantial evidence that low tide river stages will decrease in the near future and DEQ directs that the work be performed.
e. If sufficient rain occurs that transport of materials over the upland cap will impact the upland cap significantly, the work shall not be performed.
f. If, during the performance of the work, river stages increase or rains occur that make the upland cap subject to significant damage the Contractor shall consult with DEQ and endeavor to protect materials already placed.
g. Once the sediment cap materials have been placed, ruts or other impacts to the upland cap shall be repaired at the direction of DEQ. Materials previously stockpiled may be used to help with these repairs. The exact scope of this work will be determined after the seep repairs are completed and the Contract Price may need to be modified.
h. The work specified in Item 1a shall be invoiced at a lump sum price of $2,540.00. All other work in this Change Order shall be invoiced as Force Account Work in accordance with Article XV, Payment for Force Account Work, of Section 00500 of the Contract Documents. The price of the Force Account work shall not exceed $141,460.00
i. The TOTAL "NTE" CONTRACT PRICE will be increased by $144,000.00 for these fixed price and Force Account items.

3. Increase Number of On-Site Working Days

   a. In addition to compensation for Items 1 and 2, above, the number of On-Site Working Days specified in the Contract shall be increased from 92 to 106.

4. Extension of Completion Date

   a. The date beyond which all field work (including demobilization) is performed that will result in liquidated damages of $1,000.00 per calendar day shall be extended from September 30, 2005, to November 4, 2005.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $234,565.32

TOTAL CREDIT: $8,214.75

TOTAL" NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,554,450.57

THIS CHANGE ORDER

TOTAL EXTRA: $144,000.00

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,698,450.57

Four million six hundred ninety eight thousand four hundred fifty dollars and fifty seven cents

AGENCY

BY: Alan D. Kohut DATE: 10/18/05

TITLE: LQ ADMINISTRATOR

10/18/05

CONTRACTOR

BY: ______________________ DATE: ____________

TITLE: ______________________

STATE OF OREGON - DAS

BY: Teresa Moritz DATE: 10/18/05

TITLE: State Procurement Analyst

CONTRACT CHANGE ORDER

CONTRACTOR: Wilder Construction Co.

AGENCY: Oregon Department of Environmental Quality

BID NO. 102-3017-5

CONTRACT NO. 5484-PA

CHANGE ORDER NO. 10

DATE December 21, 2005

PROJECT: McCormick and Baxter Upland Cap

This Change Order amends any or all preceding contract documents and correspondences which pertain to the subject of this order and authorizes the following changes in the work:

1. Extension of Contract Completion Date, per Article II of the Contract Documents

   a. In order to accommodate submittal, review, and modification of project closeout documents, the Project Completion Date shall be extended from December 31, 2005, to January 30, 2005.

   b. The TOTAL "NTE" CONTRACT PRICE is not changed by this item.

ORIGINAL NOT-TO-EXCEED ("NTE") CONTRACT PRICE: $4,328,100.00

BALANCE OF PREVIOUS CHANGES:

TOTAL EXTRA: $378,565.32

TOTAL CREDIT: $8,214.75

TOTAL "NTE" CONTRACT PRICE BEFORE THIS CHANGE: $4,698,450.57

THIS CHANGE ORDER

TOTAL EXTRA: $0.00

TOTAL CREDIT $0.00

TOTAL "NTE" CONTRACT PRICE TO DATE: $4,698,450.57

Four million six hundred ninety eight thousand four hundred fifty dollars and fifty seven cents

AGENCY

BY: [signature] DATE: 12/22/05

TITLE: CONTRACTS OFFICER ASSOCIATE

CONTRACTOR

BY: [signature] DATE: 12-22-05

TITLE: Sr. Project Manager

STATE OF OREGON - DAS

BY: Teresa Moritz DATE: 1/3/06

TITLE: State Procurement Analyst

TOTAL P.03
TOTAL P.03

Upland Cap Subcontract
McCormick and Baxter Creosoting Co. Site

To: Pat Turina **EE-WC-01**
Wilder Construction

From: Gregory Jones
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Ecology and Environment, Inc.
Alexander Whitman, Ecology and Environment, Inc.
Chad Nancarrow, Ecology and Environment, Inc.
Andrew Murphy, Ecology and Environment, Inc.

Date: May, 26 2005

Re: Response to request to allow Surveying Contractor on site

Ecology and Environment, Inc. is providing this document to facilitate Wilder Construction request to allow there subcontracted surveying company on site to conduct work. Wilder Construction shall submit a Site Safety Plan per section 01330 of the Contract Document to the Project Engineer for review and approval prior to any planned activities on site. The surveying contractor may then proceed with work on site without using any working days against the contract for liquidated damages, when the stated requirements have been met.

This communication does not release Wilder Construction from fulfilling contract requirements specified in section 02140 of the Contract Documents. Wilder Construction is also required to submit a formal Request For Information (RFI) to coincide with this document.

Gregory Jones
Ecology and Environment, Inc.

ecology and environment, inc.
International Specialists in the Environment

333 Southwest Fifth Avenue, Suite 608
Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-02

To: Pat Turina
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 7, 2005

Re: Specification Section 02620 Monitoring Well Installation and Modification

Wilder is here by directed to implement the following monitoring well completion specifications and well modifications:

Monitoring Well Installation:

MW-1R

Total Depth = 55 feet bgs (this will be a flush mounted well)
Material = Stainless steel
Screen length = 40 feet (55-15 feet)
Diameter = 4 inch
Slot Size = 0.020

MW-35r

Total Depth = 40 feet bgs
Material = Stainless steel
Screen length = 20 feet (40-20 feet)
Diameter = 2 inch
Slot Size = 0.020
Note: This will be completed as a flush mounted well.

MW-59s

Total Depth = 35 feet bgs
Material = PVC

Screen length = 20 feet (35-15 feet, Screen should consist of 1 ten foot length and 2 five foot lengths to allow for changes due to field observations)
Diameter = 2 inch
Slot Size = 0.010

MW-60d

Total Depth = 100 feet bgs (total depth may range from 90 to 120 feet depending on field observations)
Material = Stainless steel
Screen length = 20 feet (e.g. 100 - 80 feet, Interval may vary depending on final depth. Screen should consist of 1 ten foot length and 2 five foot lengths)
Diameter = 4 inch
Slot Size = 0.020

MW-61s

Total Depth = 35 feet bgs
Material = Stainless steel
Screen length = 20 feet (35 - 15 feet)
Diameter = 2 inch
Slot Size = 0.020

MW-62i

Total Depth = 60 feet bgs
Material = Stainless steel
Screen length = 10 feet (60-50 feet)
Diameter = 4 inch
Slot Size = 0.020

Monitoring Well Modifications:

Point ID	Date of Well Installation	Company[2]	Inner Casing Diameter (inches)	Const. Type	Outer Casing Diameter (inches)	Const. Type	Surface Elevation (NGVD)	Well TD[3] (ft BGS)
PW-1d	9/29/1945	Strasser	--	--	12	GS	32.85	130
PW-2d	2/15/1968	Strasser	--	--	12	GS	32.27	95
EW-1s[6]	10/1/1987	CH2M	--	--	8	GS	30.87	--
EW-2s[6]	10/1/1987	CH2M	--	--	8	GS	33.60	--
EW-10s	9/21/1992	PTI	4	SS	6.5	GS	20.76	37.5
EW-18s	11/17/1993	PTI	4	SS	6.5	GS	33.02	40.84
EW-19s[6]	03/94 - 09/98	--	4	SS	6.5	GS	16.26	--
MW-Ds	9 27 &28 1983	AqRes	2	PVC	6 x 6	AL	34.28	32
MW-Gs	7/10/1984	CH2M	2	GS	6	GS	31.97	39.5
MW-Ks	7/10/1984	CH2M	2	GS	6 x 6	AL	33.91	35.5
MW-Os	8/1/1985	CH2M	2	GS	6 x 6	AL	32.60	41
MW-2s	11/2/1990	PTI	2	SS	6.5	GS	30.59	34.15

MW-10s	2/12/1990	PTI	2	SS	6 x 6	AL	31.55	35.6
MW-15s	2/4/1991	PTI	2	SS	6	GS	33.22	31.97
MW-20i	1/3/1991	PTI	2	SS	6	GS	33.76	70.66
MW-22i	6/26/1991	PTI	4	SS	6 x 6	AL	31.56	52.8
MW-23d	7/22/1991	PTI	4	SS	8	GS	30.67	182.17
MW-34i	12/16/1993	PTI	4	SS	6 1/8	GS	27.83	77.2
MW-48s	9/10/2003	E & E, Inc	2	PVC	6.5	GS	30.10	31
MW-49s	9/10/2003	E & E, Inc	2	PVC	6.5	GS	29.41	31
MW-50s	9/10/2003	E & E, Inc	2	PVC	6.5	GS	31.37	31
MW-51s	9/10/2003	E & E, Inc	2	PVC	6.5	GS	31.96	31
MW-52s	9/9/2003	E & E, Inc	2	PVC	6.5	GS	32.35	36.1
MW-53s	9/9/2003	E & E, Inc	2	PVC	6.5	GS	32.22	36.1
MW-54s	9/9/2003	E & E, Inc	2	PVC	6.5	GS	33.03	31
MW-55s	9/9/2003	E & E, Inc	2	PVC	6.5	GS	32.76	31
MW-56s	9/9/2003	E & E, Inc	2	PVC	6.5	GS	33.67	31
MW-57s	9/9/2003	E & E, Inc	2	PVC	6.5	GS	33.47	31

Notes:

Const.=	Construction	1	Current as of December 2004.
ft=	feet	2	Company with oversite on well installation
BGS=	Below Ground Surface	3	Data taken from Borelog.
TD=	Total Depth	4	Manual Measured Existing Well TD
		5	Adjusted based on Manual Measured Existing Well TD
		6	Borelog Missing for this well.
SS=	Stainless Steel	7	Data for this well is in COPD.
PVC=	polyvinyl chloride		
GS=	Galvanized Steel		
AL =	Alluminum		

Changes to the contract quantities will be addressed in a future change order.

Andrew Murphy
Date: June 7, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

333 Southwest Fifth Avenue, Suite 608
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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-03

To: Pat Turina
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 7, 2005

Re: Directive to eliminate pipe bedding in areas of sand and the deflection of the drainage pipe alignment to the west of monitoring well EW-1s

1. Wilder is here by relieved of the necessity to place imported sand for bedding in areas where the native material encountered at the bottom of the trench is sand and meets the following conditions:

- Is free from organic material, mica, loam, clay, or other deleterious or foreign matter, and
- does not contain rocks that may damage the pipe during compaction.

If over-excavation occurs effort must be made to compact the material placed within the over excavation.

2. Wilder is here by directed to deflect the pipe alignment to the west (riverward) around monitoring well EW-1s. This deflection shall be minimized and should be gradual. Re-stationing will not be required, and the final alignment shall be documented by as-built survey.

Andrew Murphy
Date: June 9, 2005

Received by:
Date:

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-04

To: Pat Turina
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June10, 2005

Re: Directive to maintain the gravel pad in lieu of asphalt paving within the support area

As discussed at the weekly meeting on 6/8/05, asphalt paving will be deleted from Wilder Construction's Support Area Modification subcontract with E&E. Under the Upland Cap contract with DEQ, Wilder Construction agreed to maintain the pad, 'blade', the support area as needed to allow vehicular usage. Prior to demobilization, the support area must be graded to the final grade as shown on the Support Area Modification drawings using imported rock.

Andrew Murphy
Date: June 10, 2005

Received by:
Date:

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-05

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June14, 2005

Re: Response to RFI regarding the design pressures

The design back pressure for the Tideflex TF-1 is to be approximately 6.0 psi, and the design line pressure is to be the minimum possible. It is important to have the valve open with as low of line pressure as possible as we are trying maintain open channel flow.

Andrew Murphy
Date: June 10, 2005

Received by:
Date:

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International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-06

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June14, 2005

Re: Response to RFI regarding bollards around monitoring wells

The contract specification Section 02620, subsection 3.2 Well Modification- Outside the Barrier Wall, states that bollards are to be installed around all new and existing wells in accordance with OAR 690-240-0420. The subsection 3.3 Well Modification- Within the Barrier Wall, states to that bollards are to be installed in accordance with the previously mention OAR, and if the Cap thickness does not allow for bollards to be installed to a depth of 3-feet below ground surface, the contractor shall obtain a variance from OWRD for the bollard installation. In order to allow installation Wilder is allowed to cut the geotextile layer, but is not allowed to penetrate the HDPE liner. E&E recommends that the concrete pad be bigger to compensate for the limited penetration.

Andrew Murphy
Date: June 10, 2005

Received by:
Date:

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International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-07

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June16, 2005

Re: Response to Serial Letter 001 regarding Monitoring Well Modifications on wells with creosote residue

E&E and DEQ accept the proposed no cost change order to utilize a PVC coupling and stainless steel screws to extend the well casings and do not have an issue with the flooding of the inner space between the casing and well. Please be advised that Wilder and its subcontractors remain responsible for the health and safety of their employees and the procedures followed to minimize hazardous conditions. This no cost change will be formalized in a future change order.
Andrew Murphy
Date: June 16, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-08

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June17, 2005

Re: Directive to add permanent fencing onto the Upland Cap contract

Wilder is here by directed to add the fence installation required under the Support Facility Modifications Contract to the Upland Cap Contract. This lump sum deduction from the Support Facility Contract and addition to the Upland Cap Contract will be addressed in a future change order.

Andrew Murphy
Date: June 17, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-09

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June17, 2005

Re: Concrete requirements for Monitoring Wells within the impermeable cap footprint

The following directive applies to those wells within the impermeable cap footprint where the proposed subgrade elevation is below the existing concrete pad, requiring removal of the pad.

Upon excavation around the protective casing to the proposed subgrade elevations, if the casing is still present at that elevation (i.e., the casing continues to penetrate into the subsurface) and the monument structure is deemed stable by the Engineer, then placement of concrete at the base of the protective casing shall not be required.

Andrew Murphy
Date: June 17, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Support Facility Modifications
McCormick & Baxter Creosoting Co. Site

EE-WC-09

To: Pat Turina
Wilder Construction,

From: Gregory Jones
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 17, 2005

Re: Directive to delete fencing requirements from the Support Facility Contract

Wilder Construction is here by directed to delete the permanent fence installation from the Support Facility Contract. The fence will be installed as designed under the Upland Cap Contract.

Gregory Jones
Date:

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Portland, Oregon 97204
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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-10

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June17, 2005

Re: The Lack of Specified Quality Control for the Concrete Outfall Structure

On June 16, 2005 Wilder arranged for a concrete pour at the concrete outfall structure. The mix design had only been submitted on the day before. It had just been approved. This pour occurred without sufficient prior notice to E & E's field staff. Apparently, there was insufficient notice given to the firm Wilder retains for performing the contract required field tests of concrete, because they were not on-site and the required field tests were not performed. The only 'field test' that was performed was the taking of one (four are specified) concrete cylinder using a non-standard container. E & E could have refused to let Wilder proceed with the pour. We allowed Wilder to proceed with the pour in the spirit of getting the job done and Wilder's good performance in the field to date. However, although there were no visual data indicating unsatisfactory concrete, the integrity of the concrete is still suspect. If the concrete appears distressed after the forms are removed, or if the one cylinder break result indicates that there may be problems, then DEQ will have the following options:

- Order the existing structure removed and a new one constructed, or
- Take cores of the hardened concrete for break testing, or
- Refuse to pay for the structure

We trust that this will be the last deviation from the contract mandated quality control actions.

Very truly yours,

Alexander Whitman
Ecology and Environment, Inc.
Date: June 17, 2005

Received by: Date:

ecology and environment, inc.
International Specialists in the Environment

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Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-11

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 24, 2005,

Re: Abandonment and Replacement of MW-10s

Monitoring well MW-10s was damaged beyond repair during recent well modifications required for the Upland Cap construction. Therefore, E&E and DEQ are here by directing Wilder Construction to abandon the damaged well and replace it with another in a nearby location. The location of the new well will be determined by E&E and DEQ. The new monitoring well shall be installed per applicable specification sections of the Upland Cap Contract Documents, and the well abandonment shall be performed per the applicable specification sections of the Demolition and Removal Contract Documents. The impacts to the contract will be addressed in a future change order.

Thank You,

Andrew Murphy
Ecology and Environment, Inc.
Date: June 24, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-12

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 24, 2005,

Re: Disposal of the Transformer containing PCBs under the Upland Cap

Wilder is here by directed to transfer the disposal of the transformer removed during the Demolition and Removal Contract to the Upland Cap Contract. Impacts to the contract will be addressed in a future change order.

Thank You,

Andrew Murphy
Ecology and Environment, Inc.
Date: June 24, 2005

Received by:
Date:

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International Specialists in the Environment

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Portland, Oregon 97204
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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-13

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 27, 2005,

Re: Substitution of Site Superintendent Duties during work activities on 6/25/05 without Prior Written Consent.

Please note that Per Section 00840 of the Contract Documents Wilder Construction is to provide written notification to the AGENCY (DEQ) for prior consent of any substitution in Key Personnel. On 6/25/05 Wilder Construction substituted the on-site Superintendent duties from Pete Nichols to Milo Haugen without prior written consent. The DEQ will not assess the liquidated damages for this substitution. However, in the future this provision of the contract will be enforced.

Thank You,

Andrew Murphy
Ecology and Environment, Inc.
Date: June 27, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Portland, Oregon 97204
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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-14

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 27, 2005,

Re: The Lack of Specified Subgrade Verification Submittals per Section 02200 of the Contract Documents

Per specification Section 02200, Wilder Construction was to submit subgrade verification forms and supporting documentation for E&E's inspection and verification prior to placing the Leveling Sand Layer. Wilder Construction placed Leveling Sand prior to completion of the specified verification procedure. Provide the verification forms and supporting documents. E&E and DEQ will not stop work at this time as the subgrade is being inspected during the progression of work for debris and compaction effort, and the compaction testing was monitored in the area. However, in the future the verification procedures are to be completed prior to placement of the next layer. If during review of the supporting documentation any deficiencies are found Wilder Construction will be required to make correction.

Andrew Murphy
Ecology and Environment, Inc.
Date: June 27, 2005

Received by:
Date:

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International Specialists in the Environment

333 Southwest Fifth Avenue, Suite 608
Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-15

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 28, 2005,

Re: E&E and DEQ Consent to Change in Demarcation Installation Procedure

Per specification Section 02200, Demarcation Layer, the demarcation layer is to be installed with a minimum of 1-foot overlap. Wilder Construction's proposed change from the 1-foot overlap to laying the demarcation fabric side to side and using zip ties to secure it at 10-feet intervals is acceptable with the following stipulation. The interval between zip ties may need to be adjusted, shortened, if the fabric moves excessively during installation of the Soil Cap material.

Andrew Murphy
Ecology and Environment, Inc.
Date: June 28, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

333 Southwest Fifth Avenue, Suite 608
Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-16

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 30, 2005,

Re: Compaction Requirements for the Sand Leveling Layer

Per specification Section 02200, the compaction requirement is 92-95% for the Leveling Sand Layer. Please modify the specification to a compaction of greater than or equal to 92% for the Leveling Sand Layer.

Andrew Murphy
Ecology and Environment, Inc.
Date: June 30, 2005

Received by: JZ
Date: 6/30/05

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Portland, Oregon 97204
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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-17

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: June 30, 2005,

Re: Noise Levels and Working Hours

According to the Contract Documents, the current agreed upon work hours are limited to between 7am - 6pm. The goal of this limitation is to be consistent with the City's Noise Control regulations, which limit noise levels between 6pm and 6am. Work hours may be extended with certification that Wilder modifies work activities to ensure compliance with the City's Noise Control regulations in City Code 18.10.010, Land Use Zones. It is DEQ and E&E understands that the City's noise code has the following restrictions at the receiver:

6pm and 10pm	65 dBA
10pm and 6am	60 dBA

E&E and DEQ hereby require that Wilder Construction submit a formal request to change the agreed upon work hours at least two working days prior to the day of the requested change. Please refer to the noise regulation to ensure compliance.

Andrew Murphy
Ecology and Environment, Inc.
Date: June 30, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-18

To: Pat Turina and Jacob Zacharda
Wilder Construction,

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Alexander Whitman, Project Engineer, E&E

Date: July 8, 2005, 2005,

Re: Transportation of 1.5-Inch minus Rock Via Van Houten

Wilder is hereby given approval by DEQ and E&E to use Van Houten for the delivery of the 1.5-inch minus rock provided the following conditions are fulfilled:

- The number of trucks is limited to 4 trucks per hour (approximately 40 trucks per day).
- Trucks are to be restricted to the following route for delivery: Portsmouth to McCosh to Van Houten Place.
- Trucks are to be restricted to reverse route as the one stated above.
- The deliveries are to occur during project working hours.
- All trucking via Van Houten is completed by August 12.
- Appropriate signage is deployed along the Portsmouth/McCosh/Van Houten route warning of truck traffic hazard.
- Assurance is given that the trucks do not exceed legal speed limits.

Please be aware that the need for traffic flaggers will be evaluated by E&E and DEQ on a continual basis and may be required.

Andrew Murphy
Ecology and Environment, Inc.
Date: July 8, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

333 Southwest Fifth Avenue, Suite 608
Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-19

To: Pat Turina and Jacob Zacharda
Wilder Construction

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Chad Nancarrow, Project Engineer, E&E
Alexander Whitman, Senior Engineer, E&E

Date: July 25, 2005,

Re: Extra Stockpile of Topsoil for Future ACB Storage Area Grading

Wilder is hereby directed to stockpile imported topsoil near the articulating concrete block (ACB) storage area for the eventual completion of the Upland Cap final grade when the ACB has been removed. The stockpile shall be constructed and covered in accordance with Specification Section 02200, Part 3.2. E&E estimates that approximately 450 cubic yards of soil will be need to bring the existing surface beneath the ACB to match the surrounding final grade. .

Andrew Murphy
Ecology and Environment, Inc.
Date: July 25, 2005

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

333 Southwest Fifth Avenue, Suite 608
Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-20

To: Pat Turina and Jacob Zacharda
Wilder Construction

From: Chad Nancarrow
Project Engineer
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Andrew Murphy, Oversight Engineer, E&E
Alexander Whitman, Senior Engineer, E&E

Date: July 29, 2005,

Re: Review of Subgrade Contours Outside Barrier Wall

E&E has reviewed the AutoCAD drawing (soilcap_subgrade2_AB.dwg) submitted by DEA via email on July 28, 2005, which shows the as-built contouring of the soil cap subgrade outside of the barrier wall. For comparison with the design, these contours were overlayed atop the subgrade design contours (Drawing 5). Although a majority of the site appears acceptable, there appears to be a significant discrepancy in the as-built vs. design elevations near the detention pond. The as-built subgrade in this area is as much as two feet higher than the design subgrade. This is not acceptable. Given that the final grade is supposed to follow the subgrade (plus two feet), proper drainage in this important area would be impacted very adversely. A minimum two-foot clean cover over the subgrade is critical.

Other areas of concern include the southern corner of the property (along the pond spillway) and the northwest corner of the property. In both cases, the survey is incomplete. The survey shots (and associated contours) should extend to the property lines (at a minimum) and down the bank to the cap limits (as shown Enlarged Areas 1 and 2, Drawing 5). In addition, the contours near the mound where the telephone pole was removed do not appear to accurately represent what has been constructed.

I understand that the possibility exists that the above areas may not have been constructed to specified grade when DEA performed the survey. Irregardless, verifiable evidence and documentation that the subgrade was properly constructed needs to be provided. This is very important, since this topography will be part of record drawings which allow future land users to determine where the top of the underlying contaminated soil exists. As such, the as-built topographic map should be revised to reflect actual conditions and resubmitted as soon as possible. Please provide E&E with a plan on how this issue will be resolved.

Chad Nancarrow
Ecology and Environment, Inc.
Date: July 29, 2005

Reveived By:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-21

To: Pat Turina and Jacob Zacharda
Wilder Construction

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Chad Nancarrow, Project Engineer, E&E
Alexander Whitman, Senior Engineer, E&E

Date: August 12, 2005,

Re: Directive to Stockpile Remaining 400 tons of Sand,

This work directive will confirm verbal direction to Wilder Construction authorizing that 400 tons of sand remaining in the last sand barge shall be stockpiled for future use by DEQ. The price for this work shall be determined by Article XIV, Section 00500 of the Contract.

Andrew Murphy
Ecology and Environment, Inc.
Date: August 12, 2005,

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

333 Southwest Fifth Avenue, Suite 608
Portland, Oregon 97204
Tel: (503) 248-5600, Fax: (503) 248-5577

Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-22

To: Pat Turina and Jacob Zacharda
Wilder Construction

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Chad Nancarrow, Project Engineer, E&E
Alexander Whitman, Senior Engineer, E&E

Date: August 12, 2005,

Re: General Pricing,

This work directive will reaffirm pricing methodology for changes to the Contract. The methodology is specified in Article XIV, Section 00500, of the Contract Documents. DEQ can enter into a lump sum or unit price change, but the price must be agreed to prior to starting the work. DEQ must make its own internal justification of prices and costs before agreeing to the price; this is required by federal regulations 40 CFR Part 35 Subpart O. Furthermore, according to the above cited section of the Contract Documents, the price quote must be "…justified on a Force Account basis." This means that cost for labor, equipment, and materials must be delineated for each of the labor categories, pieces of equipment, and different materials on a unit basis. Equipment must be priced at the "Blue Book" rate. Materials must be priced from the supplier. Markups shall be as specified in the referenced Contract Article.

Similarly, DEQ can enter into a Force Account change. However, except for emergencies, the change must be capped by a not-to-exceed amount. This amount may be a dollar figure or it may be a measure such as tons, etc. The type of not-to-exceed will be determined by the nature of the work.

DEQ and E & E will work with Wilder Construction to implement changes as efficiently as possible.

Thank you for your cooperation,

Andrew Murphy
Ecology and Environment, Inc.
Date: August 12, 2005,

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-23

To: Pat Turina and Jacob Zacharda
Wilder Construction

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Chad Nancarrow, Project Engineer, E&E
Alexander Whitman, Senior Engineer, E&E

Date: August 18, 2005,

Re: Change in Key Personnel,

As directed by DEQ, Wilder Construction, Inc. is permitted to substitute Mr. Don Davis for Mr. Pete Nichols as site superintendent starting during the last week in August and extending beyond. The liquidated damages specified in Section 00840 of the Specifications will not be assessed.

We also note that Mr. Jacob Zacharda will be departing at the same time as Mr. Nichols. Both DEQ and E & E appreciate the work these 2 gentlemen have done to keep the project running smoothly and trouble free. We thank them for their efforts.

Andrew Murphy
Ecology and Environment, Inc.
Date: August 18, 2005,

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-24

To: Pat Turina and Jacob Zacharda
Wilder Construction

From: Andrew Murphy
Oversight Supervisor
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Chad Nancarrow, Project Engineer, E&E
Alexander Whitman, Senior Engineer, E&E

Date: September 6, 2005,

Re: Design Change in the Southeastern Corner of the McCormick and Baxter Property,

Per the design, the southeastern corner of the property requires a minimum of 2-feet of imported topsoil. This directive documents the agreement made during the Weekly Meeting on 8/30/05 between DEQ/E&E and Wilder Construction regarding the design modifications in the southeastern corner. The Upland Cap will be completed with the following modifications:

- The fence shall remain,
- The soil cap inside the fenced area will be carried to the fence,
- The cap outside of the fence will be completed with the soil replaced with an approximately 4" thick layer of 1.5" minus rock,
- The rock cap outside will be gradually blended with existing grade, and
- Subgrade and final elevations shall be documented for as-built drawings.

Andrew Murphy
Ecology and Environment, Inc.
Date: September 6, 2005,

Received by:
Date:

ecology and environment, inc.
International Specialists in the Environment

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Upland Cap
McCormick & Baxter Creosoting Co. Site

EE-WC-25

To: Pat Turina
Wilder Construction

From: Lenna Kennard
Oversight Engineer
Ecology and Environment, Inc.

Cc: Kevin Parrett, Project Manager, DEQ
Steve Campbell, Contract Manager, DEQ
John Montgomery, Project Manager, E&E
Chad Nancarrow, Project Engineer, E&E
Alexander Whitman, Senior Engineer, E&E
Andrew Murphy, Oversight Supervisor, E&E

Date: September 23, 2005,

Re: Design Change for the grounding requirements for the support facility fence at McCormick & Baxter,

This directive documents the agreement made on September 22, 2005 between DEQ/E&E and Wilder Construction regarding the grounding requirements at the Support Pad. In lieu of the specified fence grounding requirements at the Support Pad, Wilder may furnish the following with no change in Contract Price or Schedule.

- Provide and install 3 ten-foot long grounding rods at the locations specified below.
- Locations
    - Just to the East of the East Fence Post at the Double Gate located at the South corner of the Support Pad.
    - Adjacent to the fence post that serves as fence post for each of the double gates.
    - Just North of the North Fence Post at the Double Gate located at the South corner of the Support Pad.
- Connect the adjacent fence post to the ground rod with #2 bare copper wire.

The entire support pad fence should now be effectively grounded.

Lenna Kennard
Ecology and Environment, Inc.
Date: September 23, 2005,

Received by:
Date:

G Press Release and Archaeological Survey

News Release

For release: May 23, 2005

Contacts:
Kevin Parrett, Project Manager, Land Quality Division, Portland, (503) 229-6748
Marcia Danab, Communications & Outreach, Portland, (503) 229-6488

State of Oregon
Department of Environmental Quality

Communications & Outreach
811 SW 6th Avenue
Portland, OR 97204
Phone: (503) 229-5696
(800) 452-4011
Fax: (503) 229-5850

DEQ Signs Construction Agreement for Final Work Phase at McCormick & Baxter Superfund Site

Construction of soil cap scheduled to take place this spring and summer

The Oregon Department of Environmental Quality (DEQ) has signed a contract with Wilder Construction Company to construct a 43-acre upland soil cap at the contaminated McCormick & Baxter Creosote Co. Superfund site along the Willamette River in north Portland.

This project, scheduled to occur between June and September, is the final phase in a series of cleanup efforts designed to protect human health and the environment from a variety of hazardous chemicals that were released during past operations at this former wood treating site.

Ninety percent of the funding for the soil cap is being provided by the U.S. Environmental Protection Agency (EPA), which included McCormick & Baxter on its Superfund list of major clean-up sites nationwide. DEQ is funding the remaining ten percent of the cap. Governor Ted Kulongoski has mentioned this site as part of Oregon's high-priority efforts to clean up the Willamette River.

Fifteen acres of the cap will be composed of impermeable materials designed to prevent infiltration of rainwater through the most highly contaminated subsurface soils still present at the site. The remainder of the cap will consist of two feet of clean, imported topsoil. The entire cap will be planted with native grasses.

Previous cleanup actions implemented at this site include the excavation and removal of 33,000 tons of highly contaminated soil and debris, construction of an 18-acre subsurface barrier wall and the construction of a 23-acre sediment cap. DEQ continues to extract creosote from the groundwater, of which more than 3,000 gallons has been extracted since 1996.

The McCormick & Baxter Creosoting Company operated at the site beginning in the 1940s to produce a variety of chemically treated wood products, such as utility poles. These chemicals included creosote, arsenic and pentachlorophenol (PCP). Dioxin, a byproduct of PCP, is also present at the site. Operations ceased in 1991 when the company went bankrupt. The hazardous substances present at the site are known to be harmful to humans and wildlife and can have devastating effects on fisheries habitat in the Willamette River. The Oregon Department of Human Services maintains a health advisory for crayfish harvesting within 1,000 feet of the site.

For more information on the McCormick & Baxter site, see www.deq.state.or.us/nwr/mccormick.htm

Archaeological Investigations Northwest, Inc.

2632 S.E. 162nd Ave. • Portland, Oregon 97236
Phone (503) 761-6605 • Fax (503) 761-6620

Vancouver Phone (360) 696-7473
E-mail: ainw@ainw.com
Web: www.ainw.com

December 6, 2005

Kevin Parrett, Project Manager
Oregon Department of Environmental Quality, Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, OR 97201

RE: Archaeological Survey of the Upland Soil Cap at the McCormick and Baxter Superfund Site
AINW Report No. 1592

Dear Mr. Parrett:

At your request, Archaeological Investigations Northwest, Inc. (AINW), conducted an archaeological survey of the completed upland soil cap at the McCormick and Baxter Superfund Site (Figure 1). Archaeological survey and monitoring projects had been previously conducted on the McCormick and Baxter property prior to the inspection of the completed upland soil cap. These projects included a survey for prehistoric and historic-period archaeological resources (Ellis and Zehendner 2002), monitoring of the soil-bentonite barrier wall construction (Baker and Ellis 2003), and monitoring of the topsoil stockpile and bank placement (Ellis and Baker 2005). The 2005 upland soil cap survey, as presented in this letter report, is a companion to the 2004 riverbank cap and topsoil stockpile survey. It is also the last in the series of archaeological surveys performed by AINW during construction of the cleanup remedies at the McCormick and Baxter Superfund Site.

Soil capping at the site was performed in 2004 and 2005. This work consisted of the placement of two feet of imported topsoil over six acres of regraded riverbank in 2004; stockpiling of 40,000 cubic yards of imported topsoil in 2004; and placement of one to two feet of stockpiled and imported topsoil over the 40-acre upland area in 2005. The sources of the topsoil used for the upland soil cap for the McCormick and Baxter Superfund Site came from the Reichhold Quarry, a gravel operation near St. Helens, Oregon, and from Avery Pit, a gravel operation along the Columbia River in eastern Washington. In total, approximately 60,000 cubic yards of topsoil were imported from the Reichhold Quarry and 65,000 cubic yards were imported from the Avery Pit.

A previous survey of the Avery Pit location did not identify any archaeological or historical resources in the immediate pit location (Ellis 2000). Even though no prehistoric or historic-period resources were found during the previous projects, the completed upland soil cap was surveyed because a portion of the imported soil used for the cap was taken from the location of a known archaeological site, site 35CO48, that was identified during an archaeological survey for the Reichhold Quarry gravel operation (Hamilton and Roulette 2002). Although the site was determined not to be significant, the Confederate Tribes of the Grande Ronde Community of Oregon (Grand Ronde Tribes) had concerns that artifacts might be transported from the original site location to the McCormick and Baxter property. As a result, an agreement between the Oregon Department of Environmental Quality (DEQ) and the Grand Ronde Tribes called for periodic inspection, by AINW, of the placement of topsoil used for the upland soil cap and a survey of the completed upland soil cap to document and recover any artifacts observed. This report presents the results of the survey of the completed upland soil cap.

Field Investigations

A field survey of the upland soil cap was conducted on September 1, 2005, by AINW archaeologists R. Todd Baker, M.A., David W. Cox, B.A., and Roger Warren, B.A. by walking north-south oriented transects spaced 10 m (33 ft) apart. The McCormick and Baxter Superfund Site project area looked very different from the previous on-site inspections. Two roads that used to be dirt access roads are now gravel roads. One of these roads extends along the eastern edge of the project area, just west of the railroad tracks, and the other road extends from the trailers toward the northwest corner of the project area and ends before heading down the bank to the river. The entire project area was graded flat with the exception of the river bank. The river bank was covered in grass and has been regraded. Interlocking concrete blocks, covered with sand, have been placed along the portion of the shoreline that was regraded to help prevent beach and bank erosion (Photo 1). Metal poles for fencing were being set in the ground above the bank of the Willamette River at the time of the September 1 survey.

The southeast end of the project area and the Willamette River bank contained soil that was taken from site 35CO48 at Reichhold Quarry in St. Helens and this soil is a dark brown silty loam that contains rounded, sub-rounded, and angular cobbles and gravels (Figure 2, Photo 2). Most of the cobbles are quartzite and appear to be alluvial in origin. An area near the central portion of the project contained a mix of the Reichhold Quarry and the Avery Pit soil (Figure 2). The remainder of the soil in the project area is the soil taken from the Avery Pit and consists of medium brown sandy silt that contains very few cobbles or gravels (Figure 2, Photo 3). Some areas have large pieces of burlap material laid out on top of the soil (Photo 4) and there are several water monitoring wells scattered across the project area. The southwestern edge of project area contains basalt rip-rap that extends down to the beach. The northeast corner of the property contains two mobile trailers that had been previously used as an office and an area to store personal gear and a new shop building located in this area now serves as the project office. Just west of the trailers and shop building is an area used to store materials and park heavy equipment.

Findings

No evidence of any artifacts or other archaeological deposits was observed during the survey of the completed upland soil cap. It must be noted that during the survey only a small percentage, probably less than 5%, of the total deposited upland soil cap soil was observable. There were a significant number of cobbles present in the soil imported from the St. Helens site, but very few cobbles observed in the remainder of the soil used for the cap. Cobbles that had attributes typical of cobble tools and with possible evidence of grinding, battering, or flaked edges were inspected. None of the cobbles inspected were determined to be tools. Based on the results of the upland soil cap survey, no artifacts or archaeological deposits were redeposited from site 35CO48 to the McCormick and Baxter Superfund Site.

Sincerely,

R. Todd Baker

R. Todd Baker, M.A.
Supervising Archaeologist

David V. Ellis

David V. Ellis, M.P.A.
Senior Archaeologist

References

Baker, R. Todd, and David V. Ellis
2003 *Archaeological Monitoring of the Soil-Bentonite Barrier Wall Construction at the McCormick and Baxter Creosoting Company Location.* Archaeological Investigations Northwest Inc. Report No. 1152. Submitted to Oregon Department of Environmental Quality, Northwest Region, Portland, Oregon.

Ellis, David V.
2000 *An Archaeological and Historical Survey of the Proposed Avery Pit Expansion Location Klickitat County, Washington.* Archaeological Investigations Northwest, Inc. Report No. 199. Prepared for Pacific Northwest Aggregates, Inc., Goldendale, Washington.

Ellis, David V., and R. Todd Baker
2005 *Archaeological Monitoring of Topsoil Stockpile and Bank Placement McCormick & Baxter Superfund Site.* Archaeological Investigations Northwest, Inc. Report No. 1439. Submitted to Oregon Department of Environmental Quality, Portland, Oregon.

Ellis, David V., and Maureen M. Zehendner
2002 *A Cultural Resources Survey of the McCormick & Baxter Superfund (CERCLA) Property, Portland, Oregon.* Archaeological Investigations Northwest, Inc. Report No. 236. Prepared for Oregon Department of Environmental Quality, Portland.

Hamilton, Stephen C., and Bill R. Roulette
2002 *Results of Archaeological Investigations at Site 35CO48, A Cobble Chopper Site in Columbia County, Oregon.* Applied Archaeological Research Report No. 312., Portland, Oregon. Prepared for Morse Brothers, Inc., Tangent, Oregon.

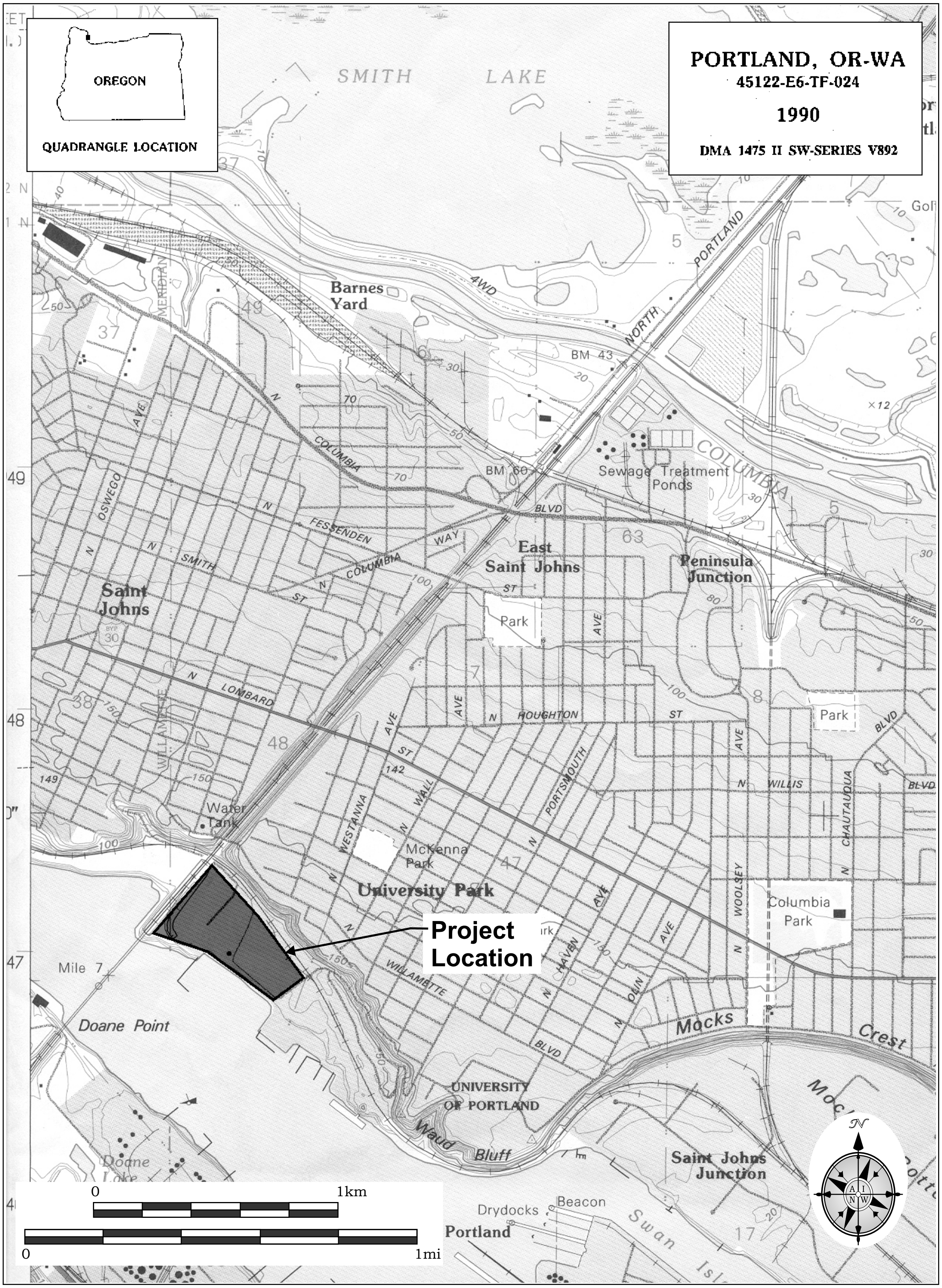

Figure 1. Project location showing Sediment Cap Survey Area.

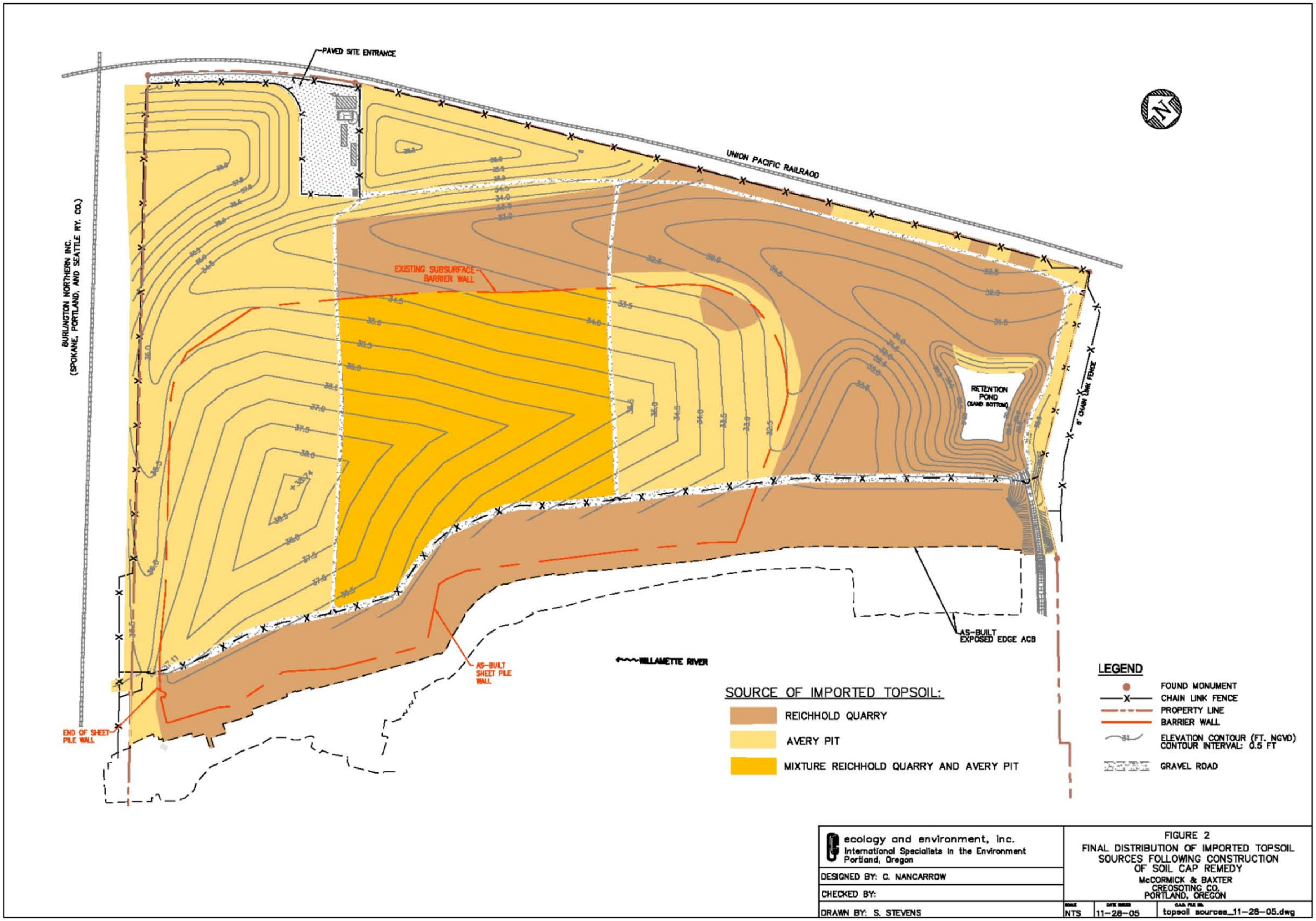

Figure 2. Distribution of imported fill used in the McCormick & Baxter soil cap.

Photo 1. Re-graded Willamette River shoreline. The view is to the northwest.

Photo 2. Southeast portion of the project area containing dirt from site 35CO48 in St. Helens, Oregon. The view is to the southeast.

Photo 3. View across the survey area from the southwest corner of the property. The view is to the northwest.

Photo 4. View across the survey area from the northwest portion of the property showing burlap ground cloth placed on top of the soil. The view is to the east.